OF THE

Sympathetick Powder.

A

DISCOURSE

IN

A Solemn Assembly

AT

MONTPELLIER.

Made, in French,

BY

Sir *KENELM DIGBY*, Knight

1657.

LONDON,

Printed for *John Williams*, 1669.

A

A

DISCOURSE

OF

The Cure of WOUNDS,

BY THE

POWDER of SYMPATHY.

My Lords,

I Believe you will remain all in one mind with me, that, to penetrate and know a Subject, 'tis neceſſary, in the firſt place, to ſhew whether the thing be ſuch, as it is ſuppoſed or imagined to be: For would not one unprofitably loſe both his time and labour, to buſie himſelf in the re-ſearch of the cauſes, of that which peradventure is but a *Chimæra*, with-any foundation of truth?

I remember to have read a place in *Plutarch*, where he propoſeth this Queſtion, Why thoſe Horſes, who, while they are Colts, have been purſued by the Wolf and ſaved themſelvs by force of runing, are more fleet than other Horſes? Wherto he anſwers, That it may be the ſcaring and affrightment, which the Wolf gives the young beaſt, makes him try his utmoſt ſtrength, to deliver himſelf from the danger that

follows

follows him at the heels: therfore, the ſaid fright, as it were, unknits his joynts, and ſtretches his ſinews, and makes the ligaments and other parts of his body the more ſupple to run; inſomuch, that he reſents it all his life afterwards, and becomes a good Courſer. Or, perhaps, ſays he, thoſe Colts, which are naturally ſwift, ſave themſelvs by flying away; wheras others, who are not ſo, are overtaken by the Wolf, and ſo become his prey: and ſo, it is not becauſe they have eſcaped the Wolf, that they are the more fleet, but it is their natural ſwiftneſs that ſaves them. He affords alſo other reaſons; and at laſt concludes, That it may be the thing is not true. I find it not ſo fit (my Lords) to reply hereto at a Table Diſcourſe: where the chief deſign of converſation is to paſs away the time gently and pleaſantly; without medling with the ſeverity of high fetcht reaſons, to wind up the ſpirits, and make them more attentive. But, in ſo renowned an Aſſembly as this, where there are ſuch Judicious Perſons and ſo profoundly learned, and who, upon this rancounter, expect from me, that I pay them in ſolid reaſons; I ſhould be very ſorry, that, having done my uttermoſt to make it clear, How the Powder, (which they commonly call the *Powder of Sympathy*) doth, naturally and without any Magick, cure wounds without touching them, yea, without ſeeing of the Patient: I ſay, I ſhould be very ſorry, that it ſhould be doubted, Whether ſuch a cure may effectually be perform'd or no.

In matter of fact, the determination of the exiſtence and truth of a thing depends on the report which our Senſes make us. This buſineſs is of that nature; Wherin, they, who have ſeen the effects and had experience therof, and have been careful to examine all neceſſary circumſtances, and ſatisfied themſelvs afterwards that there is no impoſture in the thing, nothing doubt but that it is real and true; And, they, who have not ſeen ſuch experiences, ought to refer themſelvs to Narrations and Authority of ſuch as have. I could produce divers wherof I was an ocular witneſs; nay, *Quorum pars magna fui*: But as a certain and eminent example in the affirmative is convincing, to determine the poſſibility and truth of a matter in doubt; I ſhall content my ſelf (becauſe I would not treſpaſs too much upon your patience at this time) to inſtance

inſtance in one only. But, it ſhall be one of the cleareſt, the moſt perſpicuous, and the moſt averred that can be; not only for the remarkable circumſtances therof, but alſo for the hands (which were above the Vulgar) through which the whole buſineſs paſſed. For, the cure of a very ſore hurt was perfected by this *Powder of Sympathy*, upon a Perſon illuſtrious, as well for his many perfections, as for his ſeveral employments. All the circumſtances were examined and ſounded to the bottom, by one of the greateſt and moſt knowing Kings of of his time, *viz.* King *James* of *England*; who had a particular talent and marvailous ſagacity, to diſcuſſe natural things, and penetrate them to the very marrow: As alſo by his Son, the late King *Charles*, and the Duke of *Buckingham*, their prime Miniſter. And, in fine, all was regiſtred among the Obſervations of the great Chancelor, *Bacon*, to add, by way of Appendix, to his Natural Hiſtory. And I believe, when you ſhall have underſtood this Hiſtory, you will not accuſe me of Vanity, if I attribute to my ſelf the Introducing this way of Cure, into this Quarter of the World.

Mr. *James Howel*, (well known in *France*, for his publick Works; and particularly, for his *Dendrologia*, tranſlated into French by Monſier *Baudouin*) coming by, by chance, as two of his beſt friends were fighting in Duel, did his endeavour to part them; and, putting himſelf between them, ſeiz'd with his left hand upon the Hilt of one of the Combatants, while with his right he laid hold of the Blade of the other. They, being tranſported with fury one againſt the other, ſtrugled to rid themſelvs of the hindrance their Friend made, that they ſhould not kill one another: and one of them, roughly drawing the Blade of his Sword, cut, to the very bone, the nervs and muſcles of Mr. *Howe*'s hand: and then the other, diſingaging his Hilt, gave a croſs blow on his Adverſaries head, which glanced towards his Friend; who, heaving up his hand to ſave the blow, was wounded on the back of his hand, as he had been before within. It ſeems ſome ſtrange Conſtellation reign'd then againſt him, that he ſhould loſe ſo much blood by parting two ſuch dear Friends, who, had they been themſelvs, would have hazarded both their lives to have preſerved His: But, this unvoluntary effuſion of blood by them, prevented that

which

which they ſhould have drawn one from the other. For they, ſeeing Mr. *Howel*'s face beſmear'd with blood by heaving up his wounded hand, both ran to embrace him : and having ſearch'd his hurts, they bound up his Hand with one of his Garters, to cloſe the Veins which were cut and bled abundantly. They brought him home, and ſent for a Chyrurgeon : But this being heard at Court, the *King* ſent one of his own Chyrurgeons ; for his Majeſty much affected the ſaid Mr. *Howel*.

It was my chance to be lodged hard by him ; and, four or five dayes after, as I was making my ſelf ready, he came to my Houſe, and pray'd me to view his wounds, : for I underſtand, ſaid he, that you have extraordinary remedies upon ſuch occaſions ; and my Chyrurgeons apprehend ſome fear, that it may grow to a *Gangrene*, and ſo the hand muſt be cut off. In effect, his countenance diſcover'd that he was in much pain ; which, he ſaid, was inſupportable, in regard of the extream inflammation. I told him that I would willingly ſerve him : but if, haply, he knew the manner how I would cure him, without touching or ſeeing him, it may be he would not expoſe himſelf to my manner of curing ; becauſe he would think it, peradventure, either ineffectual or ſuperſtitious. He reply'd, The wonderful things which many have related to me, of your way of medicament, makes me nothing doubt of its efficacy ; and all that I have to ſay to you is comprehended in the Spaniſh Proverb, *Hagaſe el milagro, y hagalo*, Mahoma, Let the miracle be done, though *Mahomet* do it.

I ask'd him, then, for any thing that had the blood upon it ; ſo he preſently ſent for his Garter, wherewith his hand was firſt bound : and as I call'd for a Baſon of water, as if I would waſh my hands ; I took a handful of Powder of *Vitriol*, which I had in my Study, and preſently diſſolv'd it. As ſoon as the bloody Garter was brought me, I put it in the Baſon, obſerving the while what Mr. *Howel* did ; who ſtood talking with a Gentleman in a corner of my Chamber, not regarding at all what I was doing : But he ſtarted ſuddenly, as if he had found ſome ſtrange alteration in himſelf. I ask'd him what he ail'd? I know not what ails me, ſaid he, but I find, that I feel no more pain : me-thinks, a pleaſing kind of freſhneſs, as it were

were a wet cold napkin ſpread it ſelf over my hand; which hath taken away the inflammation that tormented me before. I reply'd, ſince then you feel already ſo good an effect of my medicament, I adviſe you to caſt away all your plaiſters; only keep the wound clean, and in a moderate temper 'twixt heat and cold. After dinner I took the Garter out of the water, and put it to dry before a great fire. It was ſcarce dry, but Mr. *Howel*'s ſervant came running, to tell me that his Maſter felt as much burning as ever he had done, if not more; for the heat was ſuch, as if his hand were betwixt coales of fire. I anſwer'd, that although that had hapned at preſent, yet he ſhould find eaſe in a ſhort time; for I knew the reaſon of this new accident, and I would provide accordingly, ſo that his Maſter ſhould be free from that inflammation, it may be, before he could poſſibly return unto him: but, in caſe he found no eaſe, I wiſh'd him to come preſently back again; if not, he might forbear coming. Away he went; and at the inſtant I put again the Garter into the water; therupon, he found his Maſter without any pain at all. To be brief, there was no ſenſe of pain afterward; but, within five or ſix days the wounds were cicatriced, and entirely healed. *King James* required a punctual information of what had paſſed, touching this cure: and after it was done, and perfected, his Majeſty would needs know of me how it was done, having droll'd with me firſt (which, he could do with a very good grace) about a Magician and a Sorcerer. I anſwer'd, That I ſhould be always ready to perform what his Majeſty ſhould command; but I moſt humbly deſired him before I ſhould paſſe further, that I might tell him what the Authour, of whom I had the Secret, ſaid to the great Duke of *Toſcany*, upon the like occaſion. It was a Religious *Carmelite*, that came from the *Indies* and *Perſia* to *Florence*, he had alſo been at *China*; who, having done many marvellous cures with this *Powder*, after his arrival to *Toſcany*, the Duke ſaid, he would be very glad to learn it of him. It was the father of the Great Duke, who governs now. The *Carmelite* anſwer'd him, That it was a Secret which he had learnt in the Oriental parts, and he thought there was not any, who knew it in *Europe* but himſelf; and that it deſerv'd not to be divulged; which could not be hindred, if his Highneſs would meddle with the practice of it, be-

cauſe he was not likely to do it with his own hands; but muſt truſt a Surgeon, or ſome other ſervant; ſo that, in a ſhort time divers other would come to know it, as well as himſelf. But, a few months after, I had opportunity to do an important courteſie to the ſaid Fryar; which induced him to diſcover unto me his Secret: and the ſame year he return'd to *Perſia*; that now there is no other knows this Secret in *Europe*, but my ſelf. The *King* replied, That I needed not apprehend any fear that he would diſcover it; for he would not truſt any body in the World to make experience of this Secret, but do it with his own hands: therfore he would have ſome of the Powder, which I deliver'd, inſtructing him in all the circumſtances. Wherupon his Majeſty made ſundry proofs; whence he reciv'd ſingular ſatisfaction.

In the *Interim*, Dr. *Mayerne*, his firſt Phyſician, watch'd to diſcover what was done by this Secret: and at laſt he came to know, that the *King* made uſe of *Vitriol*. Afterwards he accoſted me, ſaying, he durſt not demand of me my Secret, becauſe I made ſome difficulty to diſcover it to the *King* himſelf: But, having learnt with what matter it was to be done, he hoped I would communicate to him all the circumſtances, how it is to be uſed. I anſwer'd him, That if he had asked me before, I I would frankly have told him all; for, in his hands, there was no fear that ſuch a ſecret ſhould be proſtituted: and ſo I told him all. A little after the Doctor went into *France*, to ſee ſome fair Territories he had purchaſed near *Geneva*; which was the Barony of *Aubonne*. In this voyage he went to ſee the Duke of *Mayerne*, who had been a long time his friend and protector; and he taught him this Secret: wherof the Duke made many experiments, which if any other but a Prince had done, it may be they had paſſed for effects of Magick and enchantments.

After the Dukes death, who was kill'd at the ſiege of *Montauban*, his Surgeon, who waited on him in doing cures, ſold this Secret to divers perſons of Quality; who gave him conſiderable ſums for it, ſo that he became very rich therby. The thing, being fall'n thus into many hands, remain'd not long in termes of a Secret but by degrees came to be ſo di-

vulged,

divulged, that now there is ſcarce any Country Barber but knows it.

Behold, Sirs, the genealogy of the *Powder of Smpathy* in this part of the World with a notable Hiſtory of a cure perform'd by it. 'Tis time now to come to the diſcuſſion, how it is done. It muſt be avowed, that 'tis a marvellous thing, that the hurt of a wounded perſon ſhould be cured by the application of a remedy put to a rag of cloth or a weapon at a great diſtance. Yet it is not to be doubted, but after a long and profound ſpeculation of all the œconomy and concatenation of natural cauſes, which may be adjudged capable to produce ſuch effects, one may fall at laſt upon the true ones, which muſt have ſubtle reſorts and means to act. Hitherto they have been wrap'd up in darkneſſe, and eſteem'd ſo inaccceſſible, that they who have undertaken to ſpeak or write of them, (at leaſt thoſe I have ſeen) have been contented to ſpeak of ſome ingenious ſleight; without diving into the bottom: endeavouring rather to ſhew the vivacity of their ſpirit and force of their eloquence, than to ſatisfie their Readers and Auditors, how the thing is really to be done. They would have us take for ready mony ſome terms, which we underſtand not, nor know what they ſignifie. They would pay us with conveniences, with reſemblances, with Sympathies, with Magnetical virtues, and ſuch terms, without explicating what theſe terms mean: They think they have done enough, if they feebly perſwade any body that the buſineſs may be performed by a natural way; without having any recourſe to the intervention of *Demons*, and *Spirits*: but they pretend not in any ſort to have found out the convincing reaſons which demonſtrate, how the thing is done.

If I did not hope to gain otherwiſe upon your ſpirits; if I did not, I ſay believe, that I ſhould be able to perſwade you otherwiſe than by words, I would not have undertaken this enterprize. I know to well,

——*Quid valeant humeri, quid ferre recuſent.*

Such a deſign requires a great fire, and vivacity of conceptions,

tions, volubility of tongue, aptneſs of expreſſions, to inſinnuate, as it were by ſurpriſal, that which one cannot carry away by a firm foot, & by cold reaſons, though ſolid. A Diſcourſe of this nature challenges other than a Stranger; who finds himſelf obliged to diſplay his ſenſe in a language, wherein he can hardly expreſs his ordinary conceptions. Nevertheleſs theſe conſiderations ſhall not deterr me from engaging my ſelf in an enterprize, which may ſeem to ſome much more difficult, than that which I am now to perform, *viz.* to make good convincing proofs, that this *Sympathetical cure* may be done naturally; and to ſhew before your eyes, and make you touch with your finger, how it may be done. You know that Perſwaſions are made by ingenious *arguments*, which, expreſſed with a good grace, rather tickle the Imagination, than ſatisfy the Underſtanding: But demonſtrations are built upon certain and approved principles; and though they be but roughly pronounced, yet they convince and draw after them neceſſary concluſions. They proceed, as a ſtrong Engin faſtned to a gate to batter it down; or as a plate of metal to imprint the mark of the mony. At every turn, that truth makes, ſhe approaches but little, and as it were inſenſibly, and makes not much noiſe, and there is no ſuch great force required to turn her; but her ſtrength, though it be ſlow, is invincible. That at the end, ſhe breaks down the gate, and makes a deep impreſſion on the piece of Gold or Silver. Whereas the ſtroke of hammers, and bars, (whereto witty diſcourſes, and the flouriſhed conceptions of Subtile ſpirits may be compared) requires the arm of a Giant, makes a great noiſe; and, at the end of the account, produces little effect.

To enter then into the matter I will (according to the method of Geometrical Demonſtrations) lay *Six* or *Seven Principles*, as foundation-ſtones, wheron I will erect my Structure. But I will lay them ſo well, and ſo firmly, that there ſhall be no great difficulty to grant them. Theſe Principles ſhall be like the wheels of *Archimedes*: by the advantage wherof a child might be capable to hale on ſhore the bigeſt *Carack* of King *Hieron*; which a hundred pair of Oxen, with all the Ropes and Cables of his *Arſenal*, were not able to ſtir. So, by the

the ſtrength of theſe Principles, I hope to waft my Concluſions to a ſafe Port.

The *Firſt Principle* ſhall be, that *the whole Orbe or Sphere of the Air is filled with Light.* If it were needful to prove in this point, that *Light* is a material and corporal *Subſtance*, and not an imaginary and incomprehenſible *Quality*, (as many Schoolmen aver), I could do it evidently enough: but I have done this in another Treatiſe, which hath been publiſhed not long ſince. And it is no new opinion: for, many of the moſt eſteemed Philoſophers among the Antients have advanced it; *yea*, the Great St. *Auguſtine*, (in his *Third Epiſtle to* Voluſian) alledges, that it is his ſentiment. But to our preſent buſineſs, whether Light be the one, or the other, it matters not; tis enough to explicate its courſe, and the journies it makes, wherto our Senſes bear witneſs. Tis clear, that, iſſuing continually out of its ſource, the *Sun*, and lancing it ſelf by a marvailous celerity on all ſides by ſtraight lines, where it encounters any obſtacles in its way, by the oppoſition of ſome hard or *opaque* body, it reflects; & leaping thence to equal angles, takes again its courſe by a ſtraight line, till it bandies upon ſome other ſolid body; & ſo it continues to make new boundings here & there; till, at the end, being chaſed on all ſides, by the bodies which oppoſe it in its paſſage, 'tis tired, and ſo extinguiſhes. *In* the like manner as we ſee a *Ball in Tenis Court*, being ſtruck by a ſtrong arm againſt the walls, leaps to the oppoſite ſide; ſo that ſometimes it makes the circuit of the whole Court, & finiſhes its motion near the place where it was firſt ſtruck. Our very eys are witneſſes of this progreſs of the Light; when, by way of reflexion, it illuminates ſome obſcure place, whither it cannot directly arrive: Or when, iſſuing immediatly from the *Sun*, & beating upon the *Moon*, or ſome other of the Planets, the ray's, which cannot find entrance there, bound upon our Earth, (otherwiſe we ſhould not ſee them); and there it is reflected, broken & bruiſed by ſo many bodies, as it meets in its diverſity of reflexions.

The *Second Principle* ſhal be, that *The Light glancing ſo upon ſome body, the rayes which enter no further but rebound from the ſuperficies of the body, carry with them ſome ſmal particles or atomes:* juſt as the Ball, whereof we have ſpoken, would carry with it ſome of the moiſture of the wall, againſt which 'tis banded, if the plaiſter therof were alſo moiſt, & as, in effect, it

carryed away ſome tincture of the black, wherwith the walls are coloured. The Reaſon wherof is, that the Light, that ſubtil and rarified fire, coming with ſuch an imperceptible haſte, (for its darts are within our eyes, as ſoon as ſoon as its head is above our Horiſon, making ſo many millions of miles in an inimaginable ſpace of time) I ſay, the Light, beating upon the body which oppoſes it, cannot chuſe but make there ſome ſmall inciſions, proportionable to its rarity and ſubtility. And theſe ſmall Atomes being cut and looſned from their trunk, the heat of the light ſticks and incorporates it ſelf with the moſt humid, viſcuous, and glewing parts of them; and carries them along with it. Experience ſhews us this, as well as Reaſon. For, when one puts ſome humid cloth to dry before the fire, the fiery rays beating theron, thoſe which find no entrance, but reflect thence, carry away with them ſome ſmall moiſt bodies, which make a kind of miſt betwixt the cloth and the fire. In like manner the *Sun* at his riſing enlightning the earth, which is moiſtned either by rain or the dew of the night, his beams raiſe a Miſt, which, by little and little, aſcends to the tops of the hills: and this Miſt doth rarifie, according as the Sun hath more force to draw it upwards; till at laſt we loſe the ſight thereof, and it becomes part of the Air, which, in regard of its tenuity, is inviſible to us. Theſe Atomes then are like Cavaliers, mounted on winged Courſers; who ride on ſtill till the Sun, ſetting, takes from them their *Pegaſus* and leaves them unmounted: and then they precipitate themſelvs in crowds to the Earth, whence they ſprung. The greateſt part of them, and the moſt heavy, fall, upon the firſt retreating of the Sun; and that we call the Serain: which though it be ſo thin that we cannot ſee it, yet we feel it, as ſo many ſmall hammers ſtriking upon our heads and Bodies; principally the elder ſort of us. For, young perſons, in regard of the boyling of their blood, and the heat of their complexion, thruſt out of them abundance of Spirits: which, being ſtronger than thoſe that fall from the Serain, repulſe them, and hinder them to operate on the Bodies, whence theſe Spirits came forth; as they do upon thoſe that, being grown cold by age, are not guarded by ſo ſtrong an emanation of their Spirits. The

Wind

Wind which blows, and is toſſed to and fro, is no other than a great River of the like Atomes; drawn out of ſome ſolid Bodies, which are upon the earth, and ſo banded here and there, according as they find cauſe for that effect.

I remember to have once ſenſibly ſeen how the Wind is ingendred. I paſſed over Mount *Cenis*, to go for *Italy*, towards the begining of Summer; and I was advanced to half the Hill, as the Sun roſe clear and luminous: but before I could ſee his body, becauſe the Mountains interpoſed, I obſerved his rays, which gilded the top of the Mountain *Viſo*; which is the Pyramid of a Rock, a good deal higher, than Mount *Cenis* and all the neighbouring Mountains. Many are of opinion, that it is the higheſt Mountain in the World, after the *Pic of Tenariff*, in the *Gran-de-Canary*: and this Mount *Viſo* is always cover'd with Snow. I obſerved then, that, about that place which was illuminated by the Solar rays, there was a Fog: which at firſt was of no greater extent, than an ordinary Boul; but by degrees it grew ſo great, that at laſt, not only the top of that Mountain, but all the neighbouring Hills were canopied all over with a Cloud. I was now come to the top of Mount *Cenis*; and, finding my ſelf in the ſtraight line, which paſſes from the Sun to Mount *Viſo*, I ſtay'd a while to behold it, while my Servants were coming up the Hill behind: for, having more men to carry my chair, than they had, I was there ſooner. It was not long e're I might perceive the ſaid Fog deſcend gently to the place where I was; and I began to feel a freſhneſs that came over my face, when I turn'd it that way. When all my Troop was come about me, we went deſcending the other ſide of Mount *Cenis*, towards *Suze*: and the lower we went, we ſenſibly found that the Wind began to blow hard behind our backs; for, our way obliged us to go towards the ſide, where the Sun was. We met with Paſſengers that were going up, as we down; who told us, that the Wind was very impetuous below, and did much incommodate them, by blowing in their faces and eyes; but the higher they came, it was leſſer and leſſer. And for our ſelves, when we were come to the place where they ſaid the Wind blew ſo hard, we found a kind of Storm: and it encreaſed ſtill, the lower we went;

till the Sun, being well advanced, drew no more by that line, but cauſed a Wind in ſome other place. *T*he people of that Country aſſured me, that it was there always ſo; if ſome extraordinary and violent accident did not intervene, and divert the ordinary courſe. *viz.* at a certain hour of the day, the Wind raiſes it ſelf to ſuch a *romb*, or point, and, when the Sun is come to another point, another wind riſes; and ſo from hand to hand it changes the point, till the Sun ſets which always brings with it a calm, if the weather be fair; and that always comes from the Mount *Viſo*, oppoſite to the Sun. *T*hey told us alſo that the daily wind is commonly ſtronger towards the bottom of the Mountain, than towards the top; wherof the reaſon is evident. For, the natural movement of every body natural encreaſes always in ſwiftneſs, according as it moves forward to its centers and that by the unequal numbers, (as *Galileo* hath ingeniouſly demonſtrated; I did it alſo in another *T*reatiſe): that is to ſay, if at the firſt moment it advances an ell, in the ſecond it advances three, in the third five, in the fourth ſeven, and ſo it continues to augment in the ſame manner; which proceeds from the denſity and figure of the deſcending body, acting upon the ceſſiblility of the *medium*. And theſe ſmall Bodies, which cauſe a wind from Mount *Viſo*, are thick and terreſtrial: for, the Snow being compoſed of watry and earthy parts united by the cold, when the heat of the Solar beams diſunites and ſeparates them, the viſcous parts flie with them; while the terreſtrial, being too heavy to fly upward, fall preſently downward. This makes me remember a very remarkable thing, which befell me when I was with my Fleet in the Port of *Scanderon* or *Alexandretta*, towards the bottom of the Mediterranean Sea: there they uſe to diſ-imbark, when they go to *Aleppo*, or *Babylon*. I had done already what I had intended to do in thoſe Seas, and happily compaſſed my deſign; ſo it imported me much to return to *England* as ſoon as poſſibly I could; and the rather becauſe my Ships were batter'd by a great Fight, I had had a little before, againſt a formidable power; wherin although I had obtain'd the better, yet, in ſo furious a diſpute, my Fleet was in ſome diſorder, and my Ships full of wounded Men. To adviſe therefore of the moſt

expe-

expedient Courſe to come to ſome Harbour, where I might repair my Ships and be in ſurety; I aſſembled all my Captains, Pilots, and Mariners, the moſt experienced of my Fleet: and, having propounded to them my deſign, they were all of an unanimous opinion, that the ſureſt courſe was towards the South, and to caſt upon *Syria*, *Judea*, *Egypt*, and *Africa*, and render our ſelves at the ſtreight of *Gibraltar*; ſailing ſo near the main Land, we ſhould have every night ſome ſmall briezes of wind, wherby we ſhould in a ſhort time make our Voyage. And beſides, we ſhould not be in any great danger to meet either with Spaniſh or French Fleets. For, *England* was at that time in open War with both thoſe Kings, and we had advice, that they had great Fleets abroad, to vindicate ſome things we had done in prejudice of them both, thoſe ſixteen months that we remain'd Maſter of thoſe Seas: therefore it concern'd us to make towards ſome ſafe Port; where we might both refreſh our Men, and repair our batter'd Veſſels.

My opinion was clean contrary to theirs: for, I believ'd our beſt Courſe were, to ſteer our Courſe Weſtward, and to ſail along the Coaſts of *Cilicia*, *Pamphylia*, *Lydia*, *Natolia*, or *Aſia the Leſs*; and to traverſe the mouth of the *Archipelago*, leave the *Adriatick* on the right hand, and paſs by *Sicily*, *Italy*, *Sardinia*, *Corſica*, the Gulph of *Lion*, and ſo coaſt all *Spain*. Telling them, that it would be a great diſhonour to us to forſake our beſt Road, for fear of the Enemy; ſince our chief buſineſs thither was to find them out: and the protection which it pleaſed God to afford us all along in ſo many Combats, in going, ought to make us hope the ſame providence would vouchſafe to guide us in returning. That there was no doubt but the road which I propoſed to them, conſider'd ſimply in it ſelf, was, without compariſon, the better, and the more expedite to ſail out of the Mediterranean Sea, and gain the Ocean; becauſe, ſaid I, although we have the briezes from the Land, as long as we are upon the Coaſts of *Syria*, and *Egypt*, we ſhall not have them

at

at all while we ſail upon the coaſts of *Lybia*, where there are thoſe fearful Sands, the *Syrtes*, which are of a great extent, the ſaid coaſt having no humidity; for there is neither tree nor herb grows there, nor ought elſe but moving Sands, which cover'd and interred heretofore at one glut the puiſſant Army of King *Cambyſes*. Now, where there is no humidity, the Sun cannot attract to make a wind: ſo that we ſhall never find there, ſpecially in Summer time, any other wind but that Regular one which blows from *Eaſt* to *Weſt*, according to the courſe of the *Sun*, who is the Father of Winds; unleſs ſome extraordinary happen, either from the coaſt of *Italy*, which lies Northward, or from the bottom of *Ethiopia*, where the Mountains of the *Moon* are, and the ſource of the Cataracts of *Nile*. Therfore, if we were near the *Syrtes*, the winds of *Italy* would be moſt dangerous to us, and expoſe us to ſhipwrack. I reaſon'd ſo according to natural Cauſes, while they of my Councel of war kept themſelvs firm to their Experience; and I would do nothing againſt the unanimous ſenſe of all: for, though the diſpoſing and reſolution of all things depended abſolutely upon my ſelf, yet I thought I might be juſtly accuſed of raſhneſs or wilfulneſs, if I ſhould prefer my own advice before that of all the reſt. So we took that courſe, and went happily, as far as the *Syrtes* of *Lybia*: but there our land-britzes fail'd us; and for ſeven and thirty days, we had no other but a few gentle *Zephirs*, which came from the Weſt, whither we were ſteering our courſe. We were conſtrain'd to keep at anchor all that time, with a great deal of apprehenſion, that the wind might come from the North, accompanied with a Tempeſt: for, if that had hapned, we had been all loſt; becauſe our anchors had not been able to hold among thoſe moving Sands (for, under water they are of the ſame nature as they are upon dry land) and ſo we muſt have been ſhipwrackt upon that coaſt. But God Almighty, who hath been pleas'd I ſhould have the honour to wait on you this day, deliver'd me from that danger. And, at the end of ſeven and thirty days, we obſerv'd the courſe of the clouds very high, which came from South-eaſt; at firſt but ſlowly, but by degrees faſter and faſter: inſomuch that, in two days, the wind, which was forming it ſelf a great way off in *Ethiopia*,

came,

came, in a tempeſt, to the place where we rid at anchor, and carried us whither we intended to go; but the force of it was broken before, coming ſo far.

Out of this Diſcourſe we may infer, and conclude, that, wherever there is any wind, there are alſo ſome ſmall Bodies or Atomes, which are drawn from the Bodies, whence they come, by the virtue of the *Sun*, and *Light*; and, that in effect, this Wind is nothing elſe but the ſaid Atomes agitated, and thruſt on by a kind of impetuoſity. And ſo, the winds partake of the qualities whence they come: as, if they come from the *South*, they are hot, if from the *North*, they are cold, if from the *Earth* alone, they are dry, if from the *Marine* or Sea-ſide, they are humid and moiſt; if from places which produce aromatical ſubſtances, they are odoriferous, wholſom, and pleaſing: As thoſe from *Arabia Fælix*, which produces Spices, Perfumes, and Gums of ſweet ſavour; or that from *Fontenay* and *Vaugirard* at *Paris*, in the ſeaſon of Roſes, which is all perfumed: on the contrary, thoſe winds that come from ſtinking places, *viz.* from the ſulphureous ſoil of *Pozzuolo*, ſmell ill: as alſo thoſe that come from infected places bring the contagion along with them.

My *Third Principle* ſhall be, that *The Air is full throughout of ſmall Bodies or Atomes*; or rather that, which we call our air, is no other than a mixture or confuſion of ſuch Atomes, wherin the aereal parts predominate.

'Tis well known, that in nature there cannot be actually found any pure Element, unblended with others: for the exteriour Fire and the Light acting one way, and the internal Fire of every Body puſhing on another way, cauſes this marvailous mixture of all things in all things. Within that huge extent, where we place the Air, there is ſufficient ſpace and liberty enough to make ſuch a mixture; which Experience, as well as Reaſon confirms. I have ſeen little *Vipers*, as ſoon as they came from the egs where they were ingendred, being not yet an inch long: which, conſerv'd in a large Gourd, (cover'd with paper tyed round about, that they might not get out, but leaving little pin-holes made in it, that the Air might enter) encreaſed in ſubſtance and bigneſs ſo prodigiouſly, in ſix, eight, or ten months, that it is incredible; and more ſenſibly

ſibly, during the ſeaſon of the *Equinoxes*, when the air is fuller of thoſe æthereal and balſamical atomes, which they drew for their nouriture.

Hence it came that the *Coſmopolites* had reaſon to ſay, *Eſt in aere occultus vitæ cibus*, there is a hidden food of life in the air. Theſe ſmal *Vipers* had but the air only for their ſuſtenance; nevertheleſs, by this thin viand, they grew, in leſs than a year, to a foot long, and proportionably big and heavy. *Vitriol*, *Salt-peter*, and ſome other ſubſtances, augment in the ſame manner, only by attraction of air.

I remember, that upon ſome occaſion, ſeventeen or eighteen years ago, I had uſe of a pound of Oil of *Tartar*; it was at *Paris*, where I had then no Operatory. Wherfore I deſired *Monſir Ferrier*, a man univerſally known by all ſuch as are curious, to make me ſome: for, he had none then ready made, but did it expreſſely for me. And becauſe, for the calcination of *Tartar*, twenty pound may be as eaſily made as two, without encreaſe of charge; he took occaſion hereby to make a quantity for his own uſe. When he brought it me, the oil ſmelt ſo ſtrong of the Roſe, that I complain'd of his mingling it with that water, wheras I had deſired him to do it purely, by expoſing it to the humid air: for, I verily thought he had diſſolved the *Salt* of *Tartar* in *Roſe-water*. He ſwore to me that he had not mingled it with any liquor; but had left the Tartar calcind within his Cellar, to diſſolve of it ſelf. It was then the ſeaſon of Roſes; therfore it ſeems that the Air, being then full of the atomes which come from the Roſes, and being changed into water by the powerful attraction of the *Salt* of Tartar, their ſmel became very ſenſible in the place where they were gathered together, as the beams of the Sun do burn, being crowded together in a burning glaſſe.

There hapned alſo another marvailous thing, touching this *Oil* of *Tartar*; which may ſerve to prove a propoſition we have not yet touched: but, not to interrupt the courſe of the ſtory, I will tell it you by way of advance. It was, that, as the Seaſon of Roſes paſſed, the ſmel of the Roſe vaniſh'd away from the ſaid *Oil* of *Tartar*; ſo that, in three or four months, it was quite gone. But we were much ſurprized, when, the next year, the ſaid odor of Roſes return'd as ſtrong

as

as ever and ſo went away again towards winter: which courſe it ſtill obſervs. Which made *Monſir Ferrier* keep it as a ſingular rarity; and the laſt Summer I found the effect in his houſe.

We have in *London* an unlucky and troubleſome confirmation of this doctrine: for, the air uſes to be full of ſuch atomes. The fuel in that great City, is commonly pit-Coal, brought from *Newcaſtle*, or *Scotland*. This Coal hath in it a great quantity of volatil Salt, very ſharp; which being carried on by the Smoke, uſes to diſſipate it ſelf and fill the air, Wherwith it ſo incorporates, that, although we do not ſee it, yet we find the effect: for it ſpoils Beds, Tapiſtries, and other houſhold ſtuffs, that are of any beautiful fair colour; the fuliginous air tarniſhing it by degrees. And, though one ſhould lock up his Chamber very clean, and come not thither in a good while, yet at his return, he will find a black kind of thin ſoot cover all his houſhold-ſtuffs as we ſee in Mills there is a white duſt, as alſo in Bakers ſhops; which uſes to whiten the walls, and ſomtimes gets into cup-boards and cheſts. The ſaid coal-ſoot alſo gets abroard, and fouls cloths upon hedges, as they are a drying; as alſo, in the Spring time, the very leavs of Trees are beſooted therewith. Now, in regard that it is this air which the lungs draw for reſpiration among the Inhabitants, therfore the flegme and ſpittle which comes from them is commonly blackiſh and fuliginous. Moreover, the acrimony of this ſoot produces another funeſt effect; for, it makes the people ſubject to inflammations, and by degrees to ulcerations in the Lungs. It is ſo corroſive and biting, that, if one put Gammons of Bacon, or Beef, or any other fleſh, within the chimney, it ſo dries it up, that it ſpoils it. Wherfore, they who have weak lungs quickly feel it; whence it comes to paſs, that almoſt the one half of them who dye in *London*, dye of ptiſical and pulmonical diſtempers; ſpitting commonly blood from their ulcerated lungs. But, at the beginning of this malady, the remedy is very eaſie: It is but to ſend them to a place where the air is good. Many, who have means to pay the charge of ſuch a journey, come to *Paris*, and they commonly uſe to recover their healths in perfection. The ſame inconveniences are alſo, though the operations

be

be not ſo ſtrong, in the City of *Liege*, wherethe Common People burn no other than pit-coals, which they call *haville*. *Paris* it ſelf alſo though the air about it be excellent, yet is ſubject to incommodities of that nature. The exceſſivly ſtinking dirt and chanels of that vaſt City mingles a great deal of ill allay with the purity of the air; ſtuffing it every where with corrupted atomes: which yet are not ſo pernicious as thoſe of *London*. We find that the moſt neat and poliſhed Silver Plate, expoſed to the air, becomes in a ſhort time livid and foul which proceeds from no other cauſe, than thoſe black atomes, (the true colour of putrefaction) which ſtick to it. I know a Perſon of Quality, (and a ſingular friend of mine) who is lodg'd in a place, where on one ſide, a great many poor people inhabit, few Carts uſe to paſs, and fewer Coaches. His neighbours behind his houſe empty their filth and ordures in the middle of the ſtreet; which uſes hereby to be ful of mounts of filth, to be carried away by Tombrells, but when they they remove theſe ordures; you cannot imagine what a ſtench what kind of infectious air is ſmelt thereabour every where. The Servants of my ſaid Friend, when this happens, uſe to cover their Plate, and Andirons and other of their faireſt houſhold-ſtuff, with Cotton or courſe Bays; otherwiſe they would be all tarniſhed. Yet nothing hereof is ſeen within the air; however theſe experiences manifeſtly convince, that the air is ſtuffed with ſuch atomes. I cannot omit to add hereto another experiment; which is, that we find by the effects, how the rays of the *Moon* are cold and moiſt. 'Tis without controverſie, that the luminous parts of thoſe rays come from the *Sun*; the *Moon* having no light at all in her: as her ecclipſes bear witneſs; which happen, when the Earth is juſt twixt her and the *Sun*, and by ſuch interpoſition hinders her to have light from his rays, The beams then which come from the *Moon* are thoſe of the *Sun*; which glancing upon her, reflect upon us, and ſo bring with them the atoms of that cold and humid-ſtar, participating of the fource whence they come. Whence, if one expoſe a hollow baſon, or glaſs, to aſſemble them, he ſhall find, that wheras thoſe of the *Sun* burn by ſuch a conjuncture, theſe, clean contrary, refreſh and moiſten in a notable manner, leaving an aquatick and viſcuous glutining

kind

kind of ſweat upon the glaſs. One would think it a folly to talk of waſhing hands in a well poliſhed Silver Baſon, wherin there is not a drop of water, yet this may be done; by the reflexion of the *Moon* beams only; which will afford a competent humidity to do it, But they who have tryed this have found their hands, after they are wiped, to be much moiſter than uſually: and this is an infallible way to take away Warts from the hands, if it be often uſed,

Let us then conclude, out of theſe premiſes and experiments, that the Air is ful of atomes; drawn from bodies, by means of the light which reflects theron, or ſallying out by the interior natural heat of thoſe bodies, which drive them forth. It may haply ſeem impoſſible that there can be an emanation of ſo many ſmall bodies, that ſhould be ſpread and carried up and down, ſo far in the air by a continual flux, (if I may ſay ſo) and yet the body whence they come receive no diminution that is perceptible; though ſometimes tis viſible enough; as, by the evaporations of the Spirits of wine, musk, and other ſuch volatil ſubſtances. But, this objection will be nul, and the two precedent Principles, render themſelvs more credible, when we ſhall ſettle another, *viz.* That *Every body, be it never ſo little, is diviſible* in infinitum: not that it hath infinite parts, (for the contrary therof may be demonſtrated) but it is capable to be divided and ſubdivided into new parts, without ever coming to the end of the diviſion: And it is in this ſenſe that our Maſters teach us that Quantity is infinitely diviſible. This is evident to him who ſhall conſider, with a profound imagination, the effence and formal notion of Quantity; which is nothing elſe but diviſibility. But, in regard that this ſpeculation is very ſubtile and metaphyſical, I will ſerve my ſelf of ſome geometrical demonſtrations to prove this truth; for, they accommodate beſt with the imagination. *Euclide* teaches us (in the *Tenth Propoſition* of his *Sixth Book*), that if one take a ſhort line, and another a long one, and the long one be divided into divers equal parts; the ſhort one may be divided alſo into as many equal parts, and every one of thoſe parts alſo into others, and theſe laſt into ſo many more, and ſo on, without being able ever to come to that which is not diviſible.

But

But let's ſuppoſe (although it be impoſſible) that one might divide and ſubdivide a line, ſo that at laſt we ſhould come to an indiviſible; and lets ſee what will come of it. I ſay then, that, ſince the line reſolves it ſelf into indiviſibles, it muſt be compoſed of them; lets ſee whether that may be verified. To which purpoſe, I take three indiviſibles, (and to diſtinguiſh them) let them be A, B, C. for, if three millions of indiviſibles make a long line, three indiviſibles will make a ſhort one. I put them then in a row; Firſt A, then B, ſo near, that they touch one another: and I ſay, that B muſt neceſſarily poſſeſs the ſame place as, A, or not poſſeſs it. If it poſſeſs the ſame place, they both together make no extenſion: and, by the ſame reaſon, neither 3, nor 3000 will do it; but all the indiviſibles will unite together, and the reſult of all ſhal be but only one indiviſible. It muſt be then, that, being not both in the ſame place, yet touching one another, one part of B muſt touch one part of A, and another part not touch it: Then I add the indiviſible C, wherof one part ſhal touch a part of B. which touches not A; and by this means B is copulant, lying between A and C, to make the extenſion. To do this, you ſee that we muſt admit that B hath parts; as the other two alſo which by your ſuppoſition are all indiviſible: and this being abſurd, the ſuppoſition is impoſſible. But, to render the matter yet more perſpicuous, let's ſuppoſe that theſe three indiviſibles make one extenſion, and compoſe one line; the propoſition already cited from *Euclide* demonſtrates, that this line may be divided into thirty equal parts, or into as many as youpleaſe: inſomuch that it muſt be granted, that every one of theſe three indiviſibles may be divided into three parts; which is point blank againſt the nature and definition of an indiviſible. But, without dividing into ſo many parts, *Euclide* ſhews (by his *Tenth propoſition* of his *Firſt Element*) that every line may be parted into two equal parts: but this, being compoſed of indiviſibles of unequal number, it muſt neceſſarily follow, that, being parted into two, there muſt be an indiviſible more on the one ſide than on the other, or the middle one be parted into two halfs. So that he, who denies that Quantity may be divided *in infinitum*, entangles himſelf in abſurdities, and incomprehenſible impoſſibilities: And on the contrary, he, who

aſſents

aſſents to it, will find it no impoſſibility or inconvenience, that the atoms of all bodies, which are in the air, may be divided, ſtretcht and carried to a marvailous diſtance. Our very ſenſes make faith hereof in ſome ſort : There is no body in the World, which we know of, ſo compact, ſo ſolid, and weighty as Gold; yet, to what a ſtrange extent and diviſion may it be brought ! Let's take an Ounce of this maſſy mettal; it ſhall be but a button, as big as my fingers end : A beater of Gold will make a thouſand leavs or more of this Ounce. Half of one of theſe leavs ſhall ſuffice to gild the whole ſurface of Silver of three or four Ounces. Let's give this gilded lingot of Silver to them, who prepare Gold and Silver Thrid to make Lace; and let them draw it to the greateſt length and ſubtilty they can; let them draw it to the thinneſs of a hair, and ſo this thrid may be a quarter of a league long in extent, if not more; and in all this length there will not be the ſpace of an atom which is not cover'd with Gold. Behold a ſtrange and marvailous dilatation of this half leaf. Let us do the like to all the reſt of the beaten Gold; it will appear that, by this means, this ſmall button of Gold may be ſo extended, as to reach from this City of *Montpellier* to *Paris*, and far beyond it : into how many millions of atoms might not this gilded line be cut with ſmall Sciſſers.

Now, 'tis eaſie to comprehend, that this extention and diviſibility, made by ſuch groſs inſtruments, as hammers and Sciſſers, is not comparable to that which is made by the light and rays of the *Sun*. And it is certain, that, if this gold may be drawn into ſuch a great length by ſpindles or wheels of iron, ſome of its parts may eaſily be carried away by thoſe winged Courſers we ſpoke of before; I mean, by the rays that flie in a moment from the Sun to the Earth.

If I did not fear to prove tedious to you by my prolixity, I would entertain you with the ſtrange ſubtility of little bodies; which iſſue forth from living bodies; by means whereof our Dogs in *England* will purſue the ſcent of a mans ſteps, or of a beaſts, many miles : and not only ſo, but they will find, in a great heap of ſtones, that which a man hath touched with his hand : Therfore, it muſt needs be, that upon the Earth, or upon the Stone, ſome material parts of

the touched body remain : yet the body doth not ſenſibly diminiſh ; no more than *Ambergriſe*, and Spaniſh skins, which will ſend out of them an odour during a hundred years, without any diminution of skin or ſmell. In our Country they uſe to ſow a whole field with one ſort of grain ; to wit, one year with Barley, the next with Wheat, the third with Beans : and the fourth year they let it reſt, and dung it, that it may recover its vigor by attraction of the vital ſpirit it receivs from the air ; and ſo be plow'd up again after the ſame degrees. Now, the year that the field is cover'd with Beans, Paſſengers uſe to ſmell them at a good diſtance off, if the wind blow accordingly, and they be in flower. It is a ſmell that hath a ſuavity with it, but fading ; and afterwards is unpleaſant, and heady. But the ſmell of *Roſemary*, which comes from the coaſts of *Spain*, goes much further. I have ſail'd along thoſe coaſts divers times, and obſerv'd always that the Mariners know when they are within thirty or forty leagues of the Continent, (I do not exactly remember the diſtance) : and they have this knowledge from the ſmell of the *Roſemary* which ſo abounds in the fields of *Spain*. I have ſmelt it as ſenſibly, as if I had had a branch of *Roſemary* in my hand ; and this a day or two before we could diſcover land ; 'tis true, the wind was in our faces, and came from the ſhore. Some Naturaliſts write that *Vultures* have come two or three hundred leagus off, by the ſmell of carrens, and dead bodies left in the field, after ſome bloody Battle ; and it was known that theſe Birds came from afar off, becauſe none uſed to breed near. They have a quick ſmelling ; and it muſt be that the rotten atoms of thoſe dead Carcaſſes were tranſported by the air ſo far: and thoſe Birds, having once caught the ſcent, purſue it to the very ſource, and, the nearer they come to that, the ſtronger it is.

We will conclude here that which we had to ſay, touching the great extent of thoſe little Bodies, which, by the mediation of the Sun-beams and of the Light, uſe to iſſue out of all Bodies that are compoſed of Elements ; which throng in the air, and are carried a marvailous diſtance from the place and bodies where they have their origin and ſource : the proof and explication of which things hath been the aim of my diſcourſe hitherto.

Now, my Lords, I muſt, if you pleaſe, make you ſee how

Theſe ſmall bodies, that ſo fill and compound the Air, are oftentimes drawn to a road altogether differing from that which their univerſal cauſes ſhould make them hold: and it ſhall be our *Fifth Principle.*

One may remark, within the courſe and œconomy of Nature, divers ſorts of attractions. As, that of *Sucking*; wherby I have ſeen leaden Bullets at the bottom of a long Barrel exactly wrought, follow the air, which one ſuck'd out of the mouth of the Gun, with that impetuoſity and ſtrength, that it broke his teeth. The attraction of water or wine by a *Scyphon* is like to this: for, by means of that, the liquor is made to paſs from one Veſſel into another, without changing any way the colour, or riſing of the lees. There is another ſort of attraction which is called *Magnetical*, wherby the *Loadſtone* draws the *Iron*. Another *Electrick*, when the *Jet-ſtone* draws to it *Straws*. There is another of the *Flame*; when the ſmoke of a Candle put out draws the flame of that which burns hard by, and makes it deſcend to light that which is out. There is another of *Filtration*, when a humid body climbs up a dry. Laſtly, when the *Fire* or ſome hot body draws the *Air* and that which is mixed therwith.

We will treat here of the two laſt *ſpecies* of Attraction; I have ſufficiently ſpoken of the reſt in another place. Filtration may ſeem to him who hath not attentively conſider'd it, nor examin'd by what circumſtances ſo hidden a Secret of Nature comes to paſs, and to a perſon of a mean and limited underſtanding, to be done by ſome occult virtue or property; and he will perſwade himſelf that, within the *Filtre* or ſtrayning inſtrument, there is ſome ſecret *Sympathy*, which makes Water to mount up, contrary to its natural motion.

But, he, who will examine the buſineſs, as it ought to be, obſerving all that is done, without omiting any circumſtance, will find there is nothing more natural, and that it is impoſſible it ſhould be otherwiſe. And we muſt make the ſame judgment of all the profound and hidden'ſt myſteries of Nature; if men would take the pains to diſcover them, and ſearch into them with judgment.

Behold, then, how Filtration is done. They uſe to put a long toung of cloth, or cotten, or ſpongy matter, within an earthen pot of Water or other liquor; and leave hanging

upon the brim of the pot a good part of the cloth; and one ſhall ſee the water preſently mount up, and paſs above the brink of the Veſſel, and drop, at the lower end of the piece of cloth, upon the ground, or into ſome Veſſel. And the Gardners make uſe of this method, to water their plants and flowers in Summer, by ſoft degrees. As alſo Apothecaries, and Chymiſts, to ſeparate their liquors from their dregs and reſidences.

To comprehend the reaſon why the water aſcends in that manner, let us nearly obſerve all that is done. That part of the cloth which is within the water becomes wetted; *viz.* it receivs and imbibes the water through its ſpungy and dry parts at firſt. This cloth ſwells in receiving the water; ſo, two bodies joyn'd together require more room than one of them would by it ſelf. Let us conſider this ſwelling and augmented extenſion, in the laſt thrid of them which touch the water, *viz.* that on the *ſuperficies*; which, to diſtinguiſh from the reſt, let us mark at the two ends (as by a line) with A. B. and the third which immediately follows and is above it, with C. D. the next with E. F. the next with G. H. and ſo to the end of the toung. I ſay then, that the thrid A, B. dilating it ſelf and ſwelling, by means of the water which enters 'twixt it's fibres or ſtrings, approaches by little and little to C. D.; which is yet dry, becauſe it touches not the water: but when A. B. is grown ſo groſs and ſwol'n, by reaſon of the water which enters, that it fills all the vacuity and diſtance 'twixt it and C. D. as alſo that it preſſes againſt C. D. by reaſon of it's extenſion, which is greater than the ſpace was betwixt them both; then it wets C. D., becauſe the thrid A. B. being compreſſed, the exterior part of the water which was in it, coming to be puſh'd on upon C. D., ſeeks there a place, and enters within the thrids, and wets them, in the ſame manner as at firſt it's exterior and higheſt part became wet. C. D. being ſo wetted, will dilate it ſelf as A. B. did; and conſequently preſſing againſt *E.* F. it cannot chooſe but work the ſame effect in it, which before it had receiv'd by the ſwelling and dilatation of A. B. and ſo, by gentle degrees, every thrid wets its neighbor, till the very laſt thrid of the

the cloth toung. And it is not to be feared, that the continuity of the Water will break, aſcending this ſcale of chords; or that it will recoil backwards: for, thoſe little ladders, ſo eaſy to be mounted, render the aſcent facile, and the woolly fibres of every thrid ſeem to reach their hands to help them up at every ſtep: and ſo the facility of geting up, joyn'd with the fluidneſs of the water, and the nature of quantity, (which tends always to the uniting of ſubſtances and bodies which it clothes, when there occurs no other predominant cauſe to break and divide it) cauſes that the water keeps it ſelf in one piece, and paſſes above the brink of the pot. After that, its voiage is made more eaſie, for it follows its natural tendence, always downwards. And, if the end of the cloth hangs lower without the pot, than the ſurface of the water within, the water drops into the ground, or ſome Veſſel placed underneath; as we ſee a chord being hung upon a pully, the longeſt and heavieſt end falls upon the ground, and carries away the ſhorteſt and lighteſt, drawing it over the pully. But, if the end of the cloth, without the pot, were *horizontal* with the ſurface of the water, and hung no lower than it, the water would be immoveable: as, the two ſides of a Ballance, when there's equal weight in both the ſcales. And, if one ſhould pour out part of the water that is in the pot, ſo that the *ſuperficies* grow lower than the end of the cloth without: in that caſe the aſcending water becoming more heavy than the deſcendant on the other ſide, without the pot, it would call back that which was gone out before and ready to fall; and would make it thruſt on and return to its former pace, and enter again into the pot, to mingle with the water there.

You ſee then this myſtery, which at firſt was ſurprizing, diſplaid, and made as familiar and natural, as to ſee a ſtone fall down from the air. 'Tis true, that to make a demonſtration thereof, exact and compleatly rigorous, we muſt add other circumſtances; which I have done in another Diſcourſe, wherein I expreſsly treated of this ſubject. But that which I now ſay is ſufficient, to give a taſte how this ſo notable Attraction is performed.

The other Attraction by Fire, which draws to it the am-

bient air, with the ſmall bodies therein, is wrought thus;

The Fire, acting according to its own nature, which it, to puſh on a continual river or exhalation of its parts, from the center to the circumference, carries away with it the air adjoyned and ſticking to it on all ſides; as the water of a river trains along with it the earth of that channel or bed, through which it glides. For, the air being humid, and the fire dry, they cannot do leſs, than embrace and hug one another. But, there muſt new air come from the places circumjacent, to fill the room of that which is carried away by the fire; otherwiſe there would a vacuity happen, which nature abhors. This new air remains not long in the place it comes to fill; but the fire, which is in a continual carreer and emanation of its parts, carries it preſently away, and draws other: and ſo there is a perpetual and conſtant current of the air, as long as the action of fire continues. We daily ſee the experience hereof: For, if one makes a good fire in ones Chamber, it draws the air from the door and windows; which though one would ſhut, yet there be crevices and holes for the air to enter, and, coming near them, one ſhall hear a kind of whiſtling noiſe which the air makes in preſſing to enter. 'Tis the ſame cauſe that produces the ſound of the Organ and Flute. And he, who would ſtand between the crevices and the fire, ſhould find ſuch an impetuoſity of that artificial wind, that he would be ready to freeze, while he is ready to burn the other ſide next the fire. And a Wax-candle held in this current of wind would melt, by the flame blown againſt the wax, and waſte away in a very ſhort time: wheras, if that Candle ſtood in a calm place, that the flame might burn upward, it would laſt much longer. But, if there be no paſſage wherby the air may enter into the Chamber, one part, then, of the vapor of the wood, which ſhould have converted to flame and ſo mounted up the funnel of the Chimney, deſcends downward againſt its nature, to ſupply the defect of air within the ſaid Chamber, and fills it with ſmoke; but at laſt the fire choaks, and extinguiſhes, for want of air. Whence it comes to paſs, that the Chymiſts have reaſon to ſay, that the air is the life of fire, as well as of animals. But, if one puts a Baſon or Veſſel of water before the

fire

fire upon the hearth, there will be no ſmoke in the Chamber; although it be ſo cloſe ſhut, that the air cannot enter : for, the fire attracts part of the water, which is a liquid ſubſtance and eaſie to move out of its place; which aquatic parts rarifie themſelvs into air, and therby perform the functions of the air. This is more evidently ſeen if the Chamber be little; for then the air, which is there pen'd in, is ſooner rais'd up and carried away. And, by reaſon of this attraction, they uſe to make great fires, where there is houſhold-ſtuff, of perſons that dyed of the Peſtilence, to diſ-infect it. For, by this inundation of attracted air, the fire as it were ſweeps the walls, floor, and other places of the Chamber; and takes away thoſe little putrified, ſharp, corroſive, and venomous bodies, which were the infection that adhered to it: drawing them into the fire, where they are partly burnt, and partly ſent up into the Chimney, accompanied with the atomes of the fire and the ſmoke. 'Tis for this reaſon that the great *Hippocrates*, (who groped ſo far into the ſecrets of Nature) diſ-infected, and freed from the Plague a whole Province or entire Region; by cauſing them to make great fires every where.

Now, this manner of attraction is made, not only by ſimple fire, but by that which partakes of it, *viz.* by hot ſubſtances: and that which is the reaſon and cauſe of the one, is alſo the cauſe of the other. For, the Spirits or ignited parts, evaporating from ſuch a ſubſtance or hot body, carry away with them the adjacent air; which muſt neceſſarily be ſupplied by other air or ſome matter eaſily rarifiable into air; as we have ſpoken of the baſon and tub of water, put before the fire to hinder ſmoke. 'Tis upon this foundation that Phyſicians ordain the application of Pigeons, or Puppy's, or ſome other hot Animals, to the ſoles of the feet, or the hand-wriſts, or the ſtomachs, or navils of their Patients; to extract out of their bodies the wind or ill vapours which infect them. And, in time of contagion or univerſal infection of the air, Pigeons, Cats, Dogs, with other hot Animals, which have continually a great tranſpiration or evaporation of Spirits, uſe to be killed: becauſe through attraction, the Air taking the room of the Spirits, which iſſue forth by the evaporation, the peſtiferous atomes,

which are ſcatter'd in the air and accompany it, uſe to ſtick to their feathers, skins, or furs.

And, for the ſame reaſon, we ſee that Bread coming hot out of the Oven, put upon the Bung, draws to it the Muſt of the Cask which would ſpoil the Wine : and that Onions, and ſuch hot bodies which perpetually exhale fiery parts, (as appears by the ſtrength of their ſmel) are quickly poiſon'd with infectious airs, if they be expoſed to them : and, 'tis one of the ſigns, to know whether the whole maſs of the air be univerſally infected.

And, one might reduce to this head the great attraction of air by calcin'd bodies; and particularly by *Tartar*, all ignited by the violent action of the fire which is crowded and encorporated among it's Salt. I have obſerved, that it attracts to it nine times more air, than it ſelf weighs. For, if one expoſe to the air a pound of Salt of Tartar well calcin'd and burnt, it will afford ten pound of good Oil of Tartar; drawing to it, and ſo incorporating the circumjacent air, and that is mingled with it : as it befell that Oil of *Tartar* which Monſir *Ferrier* made me, wherof I ſpake before. But, methinks, all this is but little, compared to the attraction of air by the body of a certain *Nun* at *Rome*; wherof *Petrus Servius*, *Urban* the *Eight*'s Phyſician, makes mention, in a Book which he hath publiſhed, touching the marvailous accidents which he obſerv'd in his time. Had I not ſuch a vouchy, I durſt not produce this Hiſtory; although the Nun her ſelf confirm'd it to me, and a good number of Phyſicians aſſured me of the truth thereof. *There* was a Nun, that, by exceſſe of faſting, watching, and mental oriſons, was ſo heated in her body, that ſhe ſeem'd to be all on fire, and her bones dryed up and calcin'd. *This* heat then, this internal fire, drawing the air powerfully; this air incorporated within her body, as it uſes to do in Salt of *Tartar* : and, the paſſages being all open, it got to thoſe parts where there is moſt ſeroſity, which is the bladder; and thence ſhe rendred it in water among her Urine, and that in an incredible quantity; for, ſhe voided, during ſome Weeks, more than two hundred pounds of Water every four and twenty Hours.

With

With this notable example I will put an end to the experiments, I have urged to prove and explicate the attraction made of air, by hot and ignited bodies, which are of the nature of fire.

My *Sixth Principle* ſhall be, that *When fire or ſome hot body attracts the Air and that which is within the Air, if it happens that within that air there be found ſome diſperſed atoms of the ſame nature with the body that draws them; ſuch atoms are more powerfully attracted, than if they were Bodies of a different nature, and they ſtay, ſtick, and mingle more willingly with the body which draws them.* The Reaſon hereof is, the Reſemblance and *Sympathy* they have one with the other. If I ſhould not explicate wherein this Reſemblance conſiſted; I ſhould expoſe my ſelf to the ſame cenſure and blame, as that which I taxed, at the beginning of my diſcourſe, in thoſe, who ſpake but lightly and vulgarly of the *Powder of Sympathy*, and ſuch marvels of Nature. But, when I ſhall have cleared that which I contend for by ſuch a reſemblance and conveniency; I hope then you will reſt ſatisfied. I could make you ſee that there are many ſorts of Reſemblances, which cauſe an Union between bodies; but I will content my ſelf to ſpeak here only of three ſignal ones.

The firſt Reſemblance ſhall be in Weight; whereby bodies of the ſame degree of heavineſs aſſemble together, The reaſon wherof is evident. For, if one body were lighter, it would occupy a higher ſituation than the heavier body; as on the contrary, if a body were more weighty, it would deſcend lower than that which is leſs heavy: but both having the ſame degree of heavineſs, they keep company together in *equilibrio*, As one may ſee by experience in this gentile example; which ſome curious ſpirits uſe to Produce, to make us underſtand how the *Four Elements* are ſituated one above the other, according to their weight. They put in a vial the ſpirit of Wine tinctur'd with red, to repreſent the Fire, the ſpirit of Turpentine tinctur'd with blew, for the Air, the ſpirit of Water tinctur'd with green, and repreſent the element of Water; And, to repreſent the *Earth*, the Powder of ſome ſolid Metal enamell'd: you ſee them one upon the other without mixing; and if you ſhake them together by a violent agita-

on you ſhal ſee a Chaos, ſuch a confuſion, that it wil ſeem there's no particular atoms that belong to any of thoſe bodies, they are ſo hudled pel mel altogether. But, ceaſe this agitation, and you ſhall ſee preſently every one of theſe four ſubſtances go to its natural place; calling again,& labouring to unite all their atoms in one diſtinct maſs, that you ſhall ſee no mixture at all.

The ſecond Reſemblance of bodies, which draw one another and unite, is among them which are of the ſame degree of *Rarity* and *Denſity*. The nature and effect of Quantity is to reduce to unity all things which it finds; if ſome other ſtronger power, (as, the differing ſubſtantial Form, which multiplies it) do not hinder. And the reaſon is evident. For the Eſſence of Quantity is *Diviſibility* or a *Capacity to be divided*, that is to be *made Many*; whence may be inferr'd that Quantity it ſelf is *not-many*; 'tis therfore of it ſelf and in its own nature one continued extenſion, Seeing then that the nature of Quantity in general tends to Unity, and Continuity; the firſt differences of Quantity, which are *Rarity* and *Denſity*, muſt produce the ſame effect of Unity, and Continuity in thoſe bodies which participate in the ſame degree of them. For proof whereof, we find, that water unites and incorporates it ſelf ſtrongly and eaſily with water, oil with oil, ſpirit of wine with ſpirit of wine: but water and oil will hardly unite, nor mercury with the ſpirit of wine; and ſo other bodies of differing denſity and tenuity.

The third Reſemblance of bodies which unites and keeps them ſtrongly together, is that of *Figure*. I will not ſerve my ſelf here with the ingenious conceit of a Great Perſonage; who holds that the continuity of Bodies reſults from ſome ſmal hooks or claſps, which keep them together; and are different in bodies of a differing nature: But (not to extend my ſelf too diffuſively in every particularity) I will ſay in groſs, as an apparent thing, that every kind of body affects a particular Figure. We ſee it plainly in the ſeveral ſorts of Salt; peel and ſtamp them ſeparately, diſſolve, coagulate, and change them as long as you pleaſe; they come again alwayes to their own natural figure, after every diſſolution, and coagulation. The ordinary Salt forms it ſelf alwaies in cubes of ſourſquare faces; Salt-peter in forms of ſix faces: Armoniac-ſalt in *Hexagons*; as the Snow doth, which is ſexangular.

Wherto

Wherto Mr. *Daviſon* attributes the pentagonary figure of every one of thoſe Stones, which were found in the Bladder of *Monſir Peletier*, to the number of fourſcore; for the ſame immediate efficient cauſe the Bladder had imprinted its action both on the ſtones, and the ſalt of the urine. The Diſtillators obſerve, that if they powre upon the dead head of ſome diſtillation the water which was diſtilled out of it, it imbibes it, and re-unites incontinently; wheras if one pour on it any other water of an heterogeneous body, it ſwims on the top, and incorporates with much difficulty. The reaſon is, that the diſtill'd water, which ſeems to be an homogeneous body, is compoſed of ſmal bodies of diſcrepant figures; as the Chymiſts plainly demonſtrate: and theſe atoms being chaced, by the action of fire, out of their own Chambers, or beds exactly fitted to them; when they come back in their antient habitations, *viz.*, to the pores which are left in the dead heads, they accommodate themſelvs, and amiably rejoin and comenſurate together. The ſame happens when it rains, after a long drougth: for, the earth immediately drinks up the water, which had been drawn up by the Sun; wheras any other ſtrange liquor would enter with ſome difficulty. Now that there are differing pores in bodies which ſeem to be homogeneous, *Monſir Gaſſendus* affirms, and undertakes to prove, by the diſſolution of Salts of differing natures in common water. When, ſays he, you have diſſolv'd in it common Salt, as much as it can bear; if you put in only a ſcruple more, it will leave it entire in the bottom, as if it were ſand or plaiſter; nevertheleſs it will diſſolve a good quantity of Salt-peter; and when 'tis glutted with this, 'twil diſſolve as much of Armoniacal ſalt, and ſo others of different figures. So that as I have obſerved elſewhere, we ſee plainly by the œconomy of Nature, that bodies of the ſame figure uſe to mingle more ſtrongly, and unite themſelves with more facility. Which is the reaſon why thoſe, that make a ſtrong glue, to piece together broken pots of Porcelain or Chryſtal, &c. always mingle with the glue the powder of that body, which they endeavour to re-accomodate: and the Goldſmiths themſelvs, when they go about to ſoder together pieces of gold, or ſilver, mingle alwayes their own duſt in the ſoder.

Having hitherto run through the reaſons and cauſes why bodies

bodies of the ſame nature, draw one to another with greater facility and force, than others, and why they unite with more promptitude; lets now ſee according to our method, how experience confirms this diſcourſe, for, in natural things we muſt have recourſe, *en dernier reſſort*, to experience; and all reaſoning that is not ſupported ſo, ought to be repudiated, or at leaſt ſuſpected to be illegitimate.

Tis an ordinary thing, when one findshe ha's burnt his hand; to hold it a good while as near the fire as he can, and by this means the ignited atomes of the fire and of the hand mingling together, and drawing one another; and the ſtronger of the two, which are thoſe of the fire, having the maſtery, the hand finds it ſelf much eaſed of the inflammation which it ſuffer'd. Tis an uſual courſe, though a naſty one, of thoſe who have ill breaths, to hold their mouths open over a Privy, as long as they can; and by the re-iteration of this remedy, they find themſelvs cured at laſt; the greater ſtink of the privy drawing to it, and carrying away, the leſſe, which is that of the mouth. They who have been prick'd or bitten by a Viper or Scorpion, hold, over the bitten or prick'd place, the head of a Viper or Scorpion bruiſed; and by this means the poyſon, which, by a kind of filtration crept on to gain the heart of the party, returns back to its principles, and ſo leavs him well recover'd. In time of common contagion, they uſe to carry about them the powder of a Toad, and ſomtimes a living Toad or Spider, ſhut up in a box; or Arſnick, or ſome other venemous ſubſtance; which draws to it the contagious air, that otherwiſe would infect the party: and the ſame powder of a Toad draws to it the poyſon of a plague ſore. The Farcy is a venemous and contagious humor within the body of a Horſe: hang a Toad about the neck of the Horſe, in a little bag, and he will be cured infallibly; the Toad, which is the ſtronger poyſon, drawing to it the venome which was within the Horſe. Make water to evaporate out of a Stove, or other room, cloſe ſhut; if there be nothing that draws this vapor, it will ſtick to the walls of the Stove, and, as it cools, recondenſe there into water; but if you put a baſon or bucket of water into any part of the Stove, it will attract all the vapor which fil'd the chamber, and no part of the wall will be wetted. If you diſſolve *Mercury*, which, reſolving into ſmoke,

paſſes

paſſes into the recipient, put into the head of the limbeck a little therof, and all the *Mercury* in the limbeck will gather there, and nothing will paſſe into the recipient. If you diſtil the Spirit of Salt, or of Vitriol, or the Baume of Sulpher, and leave the paſſage free betwixt the Spirit and the dead head, whence it iſſued; the Spirits will return to the dead head, which, being fixt and not able to mount up, draws them to it.

In our Country, (and I think it is ſo uſed here,) they uſe to make proviſion for all the year of Veniſon, at the ſeaſon that their fleſh is beſt and moſt ſavory, which is in *july*, and *Auguſt*; they bake it in earthen pots, or Ryecruſt, after they have well ſeaſond it with ſalt and ſpices; and being cold, they cover it deep with freſh butter, that the air may not enter. Nevertheleſs tis obſerv'd, that after all their diligence when the living Beaſts, which are of the ſame nature and kind, are in *Rut*, the fleſh in the pot ſmels very rank, and is very much changed, having a ſtronger taſt; becauſe of the ſpirits which come at this ſeaſon from the living Beaſts; which ſpirits are attracted naturally by the dead fleſh. And then, one hath much to do to preſerve it from being quite ſpoil'd: but the ſaid ſeaſon being paſſed, there is no danger or difficulty to keep it guſtful all the year long.

The Wine Merchants (in this Country, and every where elſe, where there is Wine,) obſerve that, during the ſeaſon that the Vines are in flower, the Wine, in their Cellars, makes a kind of fermentation, and puſhes forth a little white Lee, (which I think they call the *Mother*) upon the ſurface of the wine: which continues in a kind of diſorder, till the flowers of the Vines be fall'n; and then, this agitation or fermentation being ceaſed, all the wine returns to the ſame ſtate it was in before.

Nor is it now that this obſervation hath been made, but, beſides divers others, who ſpeak hereof, *St. Ephrem* the Syrian, (in his laſt Will and Teſtament, ſome 1300 years ago,) reports this very ſame circumſtance of Wine; ſenſibly ſuffering an agitation and fermentation within the veſſel, at the ſame time that the Vines ſeem to exhale their Spirits in the Vineyards. He makes uſe of the ſame example in dry Onions, which bud in the

the Houſe, when thoſe in the Garden begin to come out of the earth, and fill the air with their Spirits; ſhewing by theſe known examples of Nature, the communication between Living Perſons, and the ſouls of the Dead. Now thoſe Viny Spirits that iſſue from the buds and flowers, filling the air, (as the Spirits of *Roſemary* uſe to do in *Spain*) are drawn into the Veſſels, by the connatural and attractive vertue of the Wine within: and theſe new volatil Spirits, entring, excite the more fixed Spirits of the Wine, and ſo cauſe a fermentation; as if one ſhould pour therin new or ſweet wine, for in all fermentations, there is a ſeparation made of the terreſtial parts from the oily, and ſo the lighteſt mount up to the *Superficies*, the heavieſt become Tartar lees, which ſink to the bottom. But, in this Seaſon, if one be not very careful to keep the Wine in a proper and temperate place, and the Cask full and well bung'd; and to uſe other endeavours which are ordinary with *Wine-Coopers*, one runs a hazard to have his Wine impaird, or quite ſpoil'd; becauſe volatil Spirits, evaporating again, carry away with them the Spirits of the wine that is barrel'd, by exciting and mingling with them. As in like manner, the Oil of *Tartar*, which *Monſur Ferrier* made, attracting to it ſelf the volatil Spirits of *Roſes*, diffuſed in the air in their Seaſon, ſuffer'd ſuch a fermentation: and made every year new attractions of the like Spirits, in regard of the affinity which this oil had contracted with thoſe Spirits at firſt; which it loſt again ſtill as the Seaſon paſſed. And tis for the very ſame reaſon, that a Table-cloath, or Napkin, ſpoted with *Mulberries*, or red Wine, is eaſily whitned again, at the ſeaſon that the Plants flower; wheras at any other time, theſe ſpots can hardly be waſhed out. But, tis not only in *France*, and other places where Vines are near Cellars of wine, that this fermentation happens: in *England*, where we have not Vines enough to make wine, the ſame thing is obſerved; yea, and ſome particularities farther. Although they make no wine in our Country, to any conſiderable proportion, yet we have wine there in great abundance, brought over by the *Merchants*. It uſes to come principally from three places, *viz.* from the *Canaries*, from *Spain*, from *Gaſcony*. Now, theſe Regions being under different Degrees and Climates, in point of *Latitude*, and conſequently one Country being hotter

or

or colder, than the other; so that the same Vegetals grow to maturity sooner: it comes to pass, that the foresaid fermentation of our differing Wines advances it self more or less, according as the Vines, whence they proceed, do bud and flower in the Region where they grow; it being consentaneous to reason, that every sort of wine attracts more willingly the Spirits of those Vines whence it comes, than of any other.

I cannot forbear making some digression here, to unfold some other effects of Nature; which we see often, and are not less curious, than the most principal we treat of, and wil seem to be derived from more obscure causes; notwithstanding, in many circumstances, they depend on the same principles, and, in many, much differing. First, touching *Moles* or marks, which happen to Infants when their mothers, during the time of their pregnancy, have long'd for some particular things. To proceed after my accustomed manner; I will begin with an example. A Lady of high condition, whom many of this Assembly know, at least by reputation, hath upon her Neck the figure of a *Mulberry*; as exactly as any Painter or Sculptor can possibly represent one: for it bears not only the colour, but the just proportion of a *Mulberry*, and is as it were emboss'd upon her flesh. The Mother of this Lady, being with-child, had a great mind to eat some *Mulberries*; and her fancy being satisfied, one of them casually fell upon her neck; the sanguin juice whereof was soon wiped off, and she felt nothing at that time. But the Child being born, the perfect figure of a *Mulberry* was seen upon her Neck; in the same place where it fel upon the Mothers: and every year, in *Mulberpy* season, this impression, or rather this excrescence of flesh swell'd, grew big, and itch'd.

Another Lady who had the like mark of a *Strawberry*, was more incommodated therwith; for it, not only grew inflamed and itch'd in *Strawberry*-season, but broke, like an Impostume, whence issued forth a sharp corrosive humor. But, a skilful Surgeon took all away, to the very roots, by cauterizing; so that, since that time, she never felt any pain or alteration in that place which incommodated her so much; it being become a simple scar.

Now then, lets endeavour to penetrate, if we can, the causes

and

and reaſons of theſe marvailous effects. But, to go the more handſomly to work, let us reflect: that, in the actions of all our ſenſes, there is a material and corporal participation of the things we are ſenſible of, *viz.* ſome atoms of the body operate upon our Senſes, and enter into their organs; which ſerve them as funnels, to conduct and carry them to the brain and the imagination. This appears evidently in Vapours and Savours. And for Hearing, the exterior air, being agitated, cauſes a movement within the membrane or tympane of the Ear, which gives the like ſhake to the hammer tyed thereto; and that beating upon its anvil, cauſes a reciprocal motion in the air, which is ſhut within the crannies of the Ear; and this is that which we uſually call Sound.

Touching the Sight, tis evident that the Light, reflecting from the body that is ſeen, enters into the eyes; and cannot, but bring with it ſome emanations of the body wheron it reflects; as we have eſtabliſh'd in our *Second Principle*.

It remains now to ſhew that the like is done in the groſſeſt of our ſenſes, the Touch or Feeling. And if it be true, as we have ſhewn, that every body ſends forth a continual emanation of atoms out of it ſelf; it makes much for the aſſertion of this truth. But to render it yet more manifeſt, and take away all poſſibility of doubt, I will demonſtrate it evidently to the eye: wherof every one may make an experience in a quarter of an hour, if he be ſo curious, yea, in a leſs compaſs of time.

I believe you all know the notable affinity betwixt *Gold* and *Quick-ſilver*. If *Gold* but touches *Mercury*, that ſticks cloſe to it, and whitens it ſo, that it ſcarce appears *Gold*, but *ſilver* only. If you caſt this blanched *Gold* into the fire, the heat chaſes and drives away the *Mercury*, and the *Gold* returns to its former colour: but, if you repeat this often, the *Gold* calcines, and then you may pound, and reduce it to powder.

Now, there is no diſſolvant in the World that can well calcine and burn the body of *Gold*, but *Quick-ſilver*. I ſpeak of that which is already formed by Nature; without engaging my ſelf to ſpeak of that which is talked of among the Secrets of Philoſophy. Take then, a ſpoonful of *Mercury* in ſome porcelan or other diſh, and finger it with one hand: if you have a Gold-Ring on the other hand, it will become white and cover-

ed

ed with *Mercury*; though it doth not any way touch it. Moreover, if you take a leaf or a Crown of gold in your mouth, and put but one of your toes in a Veſſel where *Mercury* is; the Gold in your mouth, though you ſhut your lips never ſo cloſe, ſhall turn white and laden with *Mercury*: then, if you put the Gold in the fire, to make all the *Mercury* evaporate, and re-iterate this thing often, your Gold will be calcin'd, as if you had, by amalgation, joyn'd *Mercury* therwith corporally. And all this will yet be done more ſpeedily and effectually, if, in lieu of common *Mercury*, you make uſe of *Mercury* of Antimony, which is much hotter, and more penetrating; and, though you drive it away by force of fire, it will carry away with it a good quantity of the ſubſtance of the Gold; that, re-iterating often this operation, there will no more Gold remain for you to continue your experiments. If then, cold *Mercury* doth ſo penetrate the whole body; we ought not to think it ſtrange, that ſubtil atoms of fruit compoſed of many fiery parts wil paſs with more facility and quickneſs. I could further make you ſee how ſuch Spirits & Emanations ſuddenly alſo penetra teev'n ſteel; though it be a ſubſtance ſo compacted, cold, and hard, that the ſaid atoms keep there reſidence their many months and years. In a living body, ſuch as is Mans: the intern Spirits aid and contribute much facility to the Spirits that are without, (ſuch as thoſe of Fruits are,) to make their journy to the Brain. The great Architect of Nature in the fabrick of a Human Body, the maſter piece of corporal nature, hath placed there ſome intern Spirits, to ſerve as Sentinels, to bring their diſcoveries to their General, the *Imagination*, (which is, as it were, the Miſtreſs of the whole family,) wherby the man might know and underſtand, what is done without his Kingdom, in the great World; and might ſhun what is noxious and ſeek after that which is profitable. For, theſe Sentinels or intern Spirits, with all the inhabitants of the ſenſitive organs, are not able to to judg alone: inſomuch, that, if the Imagination or thought, be diſtracted ſtrongly to ſome other object, theſe intern Spirits do not know whether a man hath drunk the wine which he hath ſwallow'd; if perchance, ſeeing a perſon who comes to ſalute him, he fixes his eye upon him all the while, or he liſtens attentively to the air of ſome melodious Song or muſical In-

Inſtrument. The inward Spirits therefore bring all their acquiſitions to the Imagination; and if ſhe be not more ſtrongly bent upon another object, ſhe falls a forming certain Idæas and Images: for the atoms from without, being convey'd by theſe intern Spirits to our imagination, erect there the like edifice, or elſe a model in ſhort reſembling the great body whence they come, And if the Imagination hath no more uſe of thoſe ſignificative atoms for the preſent, ſhe ranges them in ſome proper place within her Magazin, the *Memory*; where ſhe can recall, and ſend them back when ſhe pleaſes. And if there be any object which cauſes ſome emotions in the Imagination, and touches her nearer, than common objects uſe to do; ſhe ſends back her Sentinels, the internal Spirits, upon the Confines, to bring her more particular news. Hence it proceeds that being ſurprized by ſome particular perſon, or other object, that has already ſome eminent place in his Imagination, be it with deſire or averſion, man ſuddenly changes colour, and becomes now red, then pale, then red again at divers times: according as the Miniſters, which are thoſe intern Spirits, go quick or ſlow towards their object, and return with their reports to their Miſtreſs, which is the Imagination. But, beſides theſe paſſages we ſpeak of, from the brain to the external parts of the body, by the miniſtry of the nerv's; there is alſo a great road from the Brain to the Heart; by which the vital ſpirits aſcend from the Heart to the Brain, to be animated: and hereby the Imagination ſends to the Heart thoſe atoms which ſhe hath receiv'd from ſome external object. And there they make an ebullition among the vital Spirits; which, according to the intervening atoms, either cauſe a *dilatation* of the Heart, and ſo gladden it; or contract it, and ſo ſadden it: and theſe two differing and contrary actions are the firſt general effects, whence proceed afterwards the particular *Paſſions*; which require not that I purſue them too far in this place, having done it more particularly elſe where, and more expreſly.

Beſides theſe paſſages, which are common to all Men and Women, there is another that's peculiar only to females; which is, from the Brain to the *Matrix*: wherby it often falls out that ſuch violent vapours mount up to the Brain; and thoſe

in

in ſo great a number, that they often hinder the operation of the Brain and Imagination, cauſing convulſions and follies, with other ſtrange accidents; and by the ſame channel, the Spirits or atoms paſs with a greater liberty and ſwiftneſs to the womb or *Matrix*, when the caſe requires.

Now, lets conſider how the ſtrong Imagination of one man doth marvailouſly act upon another man, who hath it more feeble and paſſive. We ſee daily, that, if a perſon gape; thoſe who ſee him gaping are excited to do the ſame. If one fall in company with perſons that are in a fit of laughter, he can hardly forbear laughing, though he knows not, why they laugh: or if one enters into an houſe where all the World is ſad; he becomes melancholy. Women and Children, being very moiſt and paſſive, are moſt ſuſceptible of this unpleaſing contagion of the Imagination. I have known a very melancholy woman, which was ſubject to the diſeaſe called the *Mother*; and while ſhe continued in that mood, ſhe thought her ſelf poſſeſſed, and did ſtrange things, which among thoſe that knew not the cauſe, paſſed for ſupernatural effects, and of one poſſeſſed by the ill ſpirit, ſhe was a perſon of quality; and all this hap'ned through the deep reſentment ſhe had for the death of her Husband. She had attending her four or five young Gentlewomen; wherof ſome were her Kinſwomen, and others ſerv'd her as Chamber-maids: All theſe came to be poſſeſſed as ſhe was, and did prodigious actions. Theſe young Maids were ſeparated from her ſight and communication; and not having yet contracted ſuch profound roots of the evil, they came to be all cured by their abſence: and this Lady was alſo cured afterwards by a Phyſician, who purg'd the *atrabilious* humors, and reſtored her *Matrix* to its former eſtate. There was neither impoſture, or diſſimulation in this.

I could make a notable recital of ſuch paſſions, that hap'ned to the *Nuns* at *Lodun*: but, having done it in a particular Diſcourſe at my return from that Country, where I, as exactly as I could, diſcuſſed the point, I will forbear ſpeaking therof at this time. And only pray you to remember, that, when two Lutes or Harps, near one another are both ſet to the ſame tune; if you touch the ſtrings of the one, the other conſonant Inſtrument will ſound at the ſame time, though no

body touch it; whereof *Galileo* hath ingeniouſly rendred the reaſon.

Now, to make application to our purpoſe of all that hath been produced about it, I ſay that, ſince it is impoſſible, that any two ſeveral perſons ſhould be ſo near one the other as the Mother and the Infant in her womb; one may thence conclude, that all the effects of a ſtrong and vehement Imagination, working upon another more feeble, paſſive, and tender, ought to be more efficacious in the Mother acting upon her Infant, than when the Imaginations of other perſons act upon thoſe who are nothing to them. And, as it is impoſſible for a Maſter of Muſick, let him be never ſo expert and exact, to tune ſo perfectly any two Harps, as the great Maſter of the Univerſe doth the two bodies of the Mother and the Infant; ſo by conſequence, the concuſſion of the principal ſtrings of the Mother, which is her Imagination, muſt produce a greater ſhaking of the conſonant ſtring in the Infant, to wit, his Imagination, than the ſtring of one Lute being ſtruck, can of the Conſonant ſtrings of another. Wherefore, when the Mother ſends Spirits to ſome parts of her body, the like muſt be ſent to thoſe parts of the Childs body.

Now, lets call to memory, how the Imagination of the Mother is ful of corporeal atoms, coming from the *Mulberry* or *Strawberry*, that fel upon her Neck and Breſt; and her Imagination being then ſurprized with an emotion, by the ſuddenneſs of the accident, it follows neceſſarily, that ſhe muſt ſend ſome of theſe atoms alſo to the Brain of the Infant, and ſo to the ſame part of the body, where ſhe took the ſtain at firſt; twixt which and the brain, there paſs ſuch frequent and ſpeedy meſſengers, as we have formerly ſet forth. The Infant alſo having his parts tuned in an harmonious conſonance with the Mothers, cannot fail to obſerve the ſame movement of ſpirits, twixt his Imaginations and his neck and breſt, as the mother did 'twixt hers: and, theſe Spirits, being accompanied with atoms of the *Mulberry*, which the Mother convey'd to his Imagination, make a deep impreſſion and laſting mark upon his delicate skin, wheras that of the mothers was more hard. As if one ſhould let fly a Piſtol charg'd with powder only,

againſt

againſt a Marble, the powder would do nothing but ſully it a little, which may quickly be rub'd off; but if one ſhould diſcharge ſuch a Piſtol at a Man's face, the grains of the powder would pierce the skin, and ſtick and dwel there, all his life time, making themſelvs known by their black-blewiſh colour, which they always conſerve.

In like manner, the ſmal grains or atoms of the Fruit, which paſſed from the Mothers neck to the Imagination of the Infant, and thence to the ſame place upon his skin, do lodg and continually dwel there for the future; and ſerve as a ſource to draw the atoms of the like fruit diſperſed in the air, in their ſeaſon, (as the wine in the Tun draws to it the volatil ſpirits of the Vines) and by drawing them, the part of the skin, where they reſide, ferments, ſwels, corrod's, inflames, and ſometimes breaks. But to render yet more conſiderable theſe marvailous marks of longing, (ſince we are upon this ſubject), I cannot forbear to touch alſo another circumſtance, which might ſeem at firſt to be a miracle of Nature, beyond the cauſes which I have alledg'd: but having well eventilated it, we ſhall obſolutely find that it depends upon the ſame principles. T'is. that oftentimes it falls out, that the impreſſion of the thing deſired or longed for by the Mother, ſticks on the Child; though the thing it ſelf ne'r toucht the mothers body. T'is ſufficient, that ſome other thing fal or inexpectedly beat upon ſome part of the woman with-child, while ſuch a longing predominates in her imagination; and the figure of the thing ſo long'd for, will be found at laſt imprinted on the ſame part of the body of the Infant, where the Mother receiv'd the ſtroke. The reaſon hereof is, that the atoms of the thing long'd for, being raiſ'd up by the Light, go to the brain of the Mother, through the channel of her eyes, as well as other more material atoms, proceeding from the corporeal touch, would go thither, by the guidance of the nervs: And, of theſe petty bodies, the mother forms in her imagination a complete model of that whence they flow by way of emanation. Now, if her mind only run on it, theſe atoms, which are in her imagination, make no other voyage, than to her heart, and thence to the imagination and heart of the Infant; and ſo cauſe a reinforcement of the Paſſion in them both which may be moved

to ſuch a violent impetuoſity, that, if the Mother doth not enjoy her long'd-for object, this paſſion may cauſe the deſtruction both of her and her Infant, at leaſt make ſo great a change in their bodies as may prejudice them both in their healths'But, if ſome unlook'd-for blow ſurprize the mother in any part of her body,it often happens that the ſpirits,which reſide in the brain, are immediately ſent to that part by her imagination. And, in all ſuch ſudden ſurpriſals, either in women or men, theſe ſpirits are tranſported with the more impetuoſity, the more the Paſſion is violent: As, when one loves another paſſionately, he runs ſuddenly to the door when any knocks, or that --- *Hylax in limine latrat*, hoping always t'is the party that entirely occupies his thoughts, (for *qui amant ipſi ſibi ſomnia fingunt*) who comes to give him a viſit. Theſe ſpirits then moved by this ſudden aſſault, being mingled with the petty bodies or atoms of the long'd-for thing which poſſeſſes ſo powerfully the fantaſie, carry them along with themſelvs to the part of the body which is ſtruck; as alſo to the ſame part of the body of the Infant, as well as to his Imagination: and after that, all which haprens is but the ſame in reſpect of the Mother and the child; as when the *Mulberry* or *Strawberry* fell upon the neck or breaſt of the Ladies, with whom I have entertain'd you.

Permit me, my Lords, to inlarge my digreſſion a little further by re-accounting to you a marvailous accident, known all over the Court of *England*;in the confirmation of theactivity and impreſſion which the Imagination of the Mother makes upon the body of the Infant in her womb. A Lady that was my Kinſwoman, (ſhe was the Neice of *Forteſcu*, the Daughter of Count *Arundel*) came to give me viſits ſomtimes in *London*; ſhe was handſome and knew it well; taking great complacency not only to keep her ſelf ſo, but to add that which ſhe could further: wherefore being perſwaded that black Patches which ſhe uſed, gave her a great deal of ornament, ſhe was careful to wear the moſt curious ſort. But as it is very hard to keep a moderation, in things which depend more upon *Opinion*, than *Nature*; ſhe wore them in exceſs, and patched moſt of her face with them, Though that did not much add to her beauty, and I took the liberty to tell her ſo

yet

yet I thought it no opportunity then, to do any thing that ſhould give her the leaſt diſtaſt; ſince with ſo much civility and ſweetneſs ſhe came to viſit me. Nevertheleſs, one day I thought good, in a kind of drolling way ſo that ſhe might not take any diſguſt, (and *Ridentem dicere verum quis vetat?*) to tell her of it; ſo I let my diſcourſe fall upon her *great-belly*, adviſing her to have a care of her health, wherof ſhe was ſomewhat negligent; according to the cuſtom of young vigorous women, which know not yet what it is to be ſubject to indiſpoſitions, She gently thank'd me for my care herein; ſaying, That ſhe could do no more for the preſervation of her health, than ſhe did, though ſhe was in that caſe. You ſhould at leaſt, I reply'd, have a great care of your Child, O! for that, ſaid ſhe, there is nothing can be contributed. Yet, I told her, ſee how many *Patches* you wear upon your face: are you not afraid that the Infant in your womb may haply be born with ſuch marks on his face? But, ſaid ſhe, What danger is there that my child ſhould bear ſuch marks, though I put them on artificially? Then, you have not heard, I reply'd, the marvailous effects that the imaginations of Mothers work upon the bodies of their children, while they are yet big with them; therfore I will reaccount to you ſome of them. So I related to her ſundry ſtories upon this ſubject: as, that of the Queen of *Ethiopia*, who was delivered of a white Boy; which was attributed to a Pictu reof the Bleſſed Virgin, ſhe had near the teaſter of her bed, where bore ſhe great devotion. I urged another, of awoman who was brought to bed of a child all hairie; becauſe of a pourtrait of *St. John Baptiſt* in the Wilderneſs, when he wore a coat of Camels hair. I re-accounted to her alſo the ſtrange Antipathy which the late *King James* had to a naked ſword; wherof thecauſe was aſcribed to ſome *Schotch* Lords, entring once violently into the Bed-chamber of the Queen his Mother, while ſhe was with child of him, where her Secretary, an *Italian*, was diſpatching ſome letters for her: whomthey hack'd and kill'd with naked Swords, before her face, and threw him at her feet; and they grew ſo barbarous, that they had near hurt the Queen her ſelf who endeavour'd to ſave her Secretary by interpoſing her ſelf, for her skin was raſed in divers places. *Buchanan* makes mention of this Tragedy. Hence it came

that her Son, *King James*, had ſuch an averſion all his life time to a naked Sword; that he could not ſee one, without a great emotion of ſpirits: and, though otherwiſe couragious enough, he could not over-maſter his paſſions in this particular. I remember, when he dub'd me *Knight*; in the ceremony of putting a naked Sword upon my ſhoulder, he could not endure to look upon it, but turned his face another way; inſomuch that, in lieu of touching my ſhoulder, he had almoſt thruſt the point into my eyes, had not the Duke of *Buckingingham* guided his hand aright.

I alledg'd to her divers ſuch ſtories; to make her apprehend, that a ſtrong Imagination of the Mother might cauſe ſome notable impreſſion upon the body of her Child, to his prejudice. And 'pray conſider, ſaid I, how attentive you are to your Patches, how you have them continually in your imagination; for, I have obſerved, that you have look'd on them ten times ſince you came to this room, in the Looking-glaſs. Have you, therfore, no apprehenſion that your child may be born with half moons upon his face; or rather, that all the black, which you ſpot in ſeveral places up and down may aſſemble in one, and appear in the middle of his forehead, the moſt apparant and remarkable part of the viſage, as broad as a *Facobus*: and then, what a grace would it be to the Child. Oimee! ſaid ſhe, rather than that ſhould happen, I will wear no more Patches, and while I am with-child: thereupon inſtantly ſhe pul'd them all off, and threw them away. When her friends ſaw her afterwards without Patches; they demanded how it came to paſs, that ſhe, who was eſteem'd to be one of the moſt curious Beauties of the Court, in point of Patches, ſhould ſo ſuddenly give over wearing them? She anſwer'd, that her Uncle, in whom ſhe had a great deal of belief, aſſured her, that, if ſhe wore them, during the time ſhe was with-child, the Infant would have a large black patch in the midſt of his forehead. Now, this conceit was ſo lively engraven in her imagination, that ſhe could not thruſt it out: And ſo this poor Lady, who was ſo fearful that her child ſhould bear ſome black mark in its face, yet could not prevent, but

it

it came so into the World, and had a spot as large as a Crown of Gold in the midst of the forehead; according as she had figured before in her imagination. It was a Daughter that she brought forth every way very beautiful, this excepted: 'tis but few moneths since, that I saw her bearing the said mole or spot, which proceeded from the force of the Imagination of her Mother.

I need not tel you of your Neighbour of *Carcassona*; who lately was brought to bed of a prodigious Monster, exactly resembling an Ape, which she took pleasure to look upon, during the time she was with-child: for, I conceive you know the story better than I. Nor of the woman of *St. Maixent*, who could not forbear going to see an infortunate child of a poor passenger woman, that was born without arms; and she her self was deliver'd afterwards of such a Monster; who yet had some smal excrescences of flesh upon the shoulders, about the place whence the arms should have come forth. As also of her who was desirous to see the execution of a Criminal, that had his head cut off according to the laws of *France*: wherof her affrightment made so deep a print upon her Imagination, that presently falling in labour, before they could carry her, to her lodging, she was brought to-bed, before her time, of a Child who had his head sever'd from his body, both the parts yet shedding fresh blood, besides that which was abundantly shed in the womb; as if the heads-man had done an execution also upon the tender young body within the Mothers wombe. These three Examples, manifestly enough prove the strength of the Imagination: and many others, as true I could produce; which would engage me too far, if I should undertake to clear the causes and unwrap the difficulties that would be found greater in them, than in any of those wherwith I have entertain'd you. Because those spirits had the power to cause essential changes and fearful effects, upon bodies that were already brought to their perfect shapes; and it may be well believ'd, that in some of them there was a transmutation of one *species* to another, and the introduction of a new *Form* into the subject-Matter, totally differing from that which had been introduced at first; at least, if that which most Naturalists tell us, at the animation of the

Embryo

Embryo in the womb, be true. But this digreſſion hath been already too long

To return then, to the great channel and thrid of our Diſcourſe. The examples and experiments, which I have already inſiſted on in confirmation of the reaſons I have aledg'd, clearly demonſtrate that Bodies, which draw the atomes diſperſed in the air, attract themſelvs ſuch as are of their own nature, with a greater force and energy, than other heterogeneous and ſtrange atoms; as Wine doth the vinal ſpirits; The oyl of Tartar perfum'd in the making, with Roſes, drew the volatil ſpirits of the Roſe; The fleſh of Deer, or Veniſon buried in cruſt, attracts the ſpirits of thoſe Beaſts; and ſo all the other wherof I have ſpoken.

The Hiſtory of the *Tarantula*, in the kingdom of *Naples*, is very famous: you know how the venome of this Animal, aſcending from the part that was bitten, towards the head and heart of the Parties; excites in their Imagination an impetuous deſire to hear ſome melodious airs; and moſt commonly they are delighted with differing airs. Therfore, when they hear an air that pleaſes them, they begin to dance inceſſantly; and, therby fall a ſweating in ſuch abundance, that a great part of the venome evaporates. Beſides, the ſound of the muſick raiſes a movement, and cauſes an agitation among the aereal and vaporous Spirits in the brain, and about the heart; and diffuſed up and down through the whole body, proportionably to the nature and cadence of ſuch Muſick: as, when *Timotheus* tranſported *Alexander the great* with ſuch a vehemency, to what Paſſions he pleaſ'd: and, as when one Lute ſtruck makes the conſonant ſtrings of the other to tremble, by the motions and tremblings which it cauſes in the air; though they be not touch'd otherwiſe at all. We find too, oftentimes, that Sounds (which are no other thing, than Motions of the air,) cauſe the like movement in the Water: as, the harſh ſound, cauſ'd by rubbing hard with ones finger, the brim of a glaſs full of water, excites a noiſe, a turning, and boundings, as if it danced according to the cadence of the Sound: The harmonious Sounds alſo of Bells, in thoſe Countries where they uſe to be rung to particular tunes, makes the like impreſſions upon the *ſuperficies* of the Rivers that are nigh the Steeple, as in the Air eſpecially in the night time,

when

when there is no other movement, to ſtop or choak the other ſupervenient one. For, the air being contiguous, or rather continuous, with the water; and the water being ſuſceptible of movement; ther's the like motion cauſed in the fluid parts of the water, as began in the air. And, the ſame contract, which is betwixt the agitated air, and the water by this means moved to; happens alſo to be betwixt the agitated air, and the vap'rous Spirits in thoſe bodies that have been bitten by the *Tarantula*; which Spirits, by conſequence, are moved by the agitated air, that is to ſay, by the Sound; and that the more efficaciouſly, the more this agitation or Sound is proportion'd to the nature and temperature of the party hurt. And, this intern agitation of the Spirits and vapours helps them to diſcharge the vaporous venom of the *Tarantula*, which is mixt among all their humours: as ſtanding puddle Waters and corrupted airs, putrified by long repoſe, and the mixture of other noiſome ſubſtances, are refin'd and purifi'd by motion. Now, winter approaching, which deſtroys theſe Animals, the perſons are freed from this malady; but, at the return of that ſeaſon when they uſe to be bitten, the miſchief returns, and they muſt dance again as they did, the year before. The reaſon is, that the heat of Summer revives theſe Beaſts, ſo that their venom becomes as malignant and furious as before; and, that being heated and evaporating it ſelf, and diſperſing in the air the leven of the ſame poyſon, which remains in the bodies of them who have been hurt, that draws it to it ſelf; wherby ſuch a fermentation is wrought, as infects the other humours, and thence a kind of ſteam iſſuing and mounting to the brain, uſes to produce ſuch ſtrange effects.

It is alſo well known that, where there are great dogs or Maſtifs (as in *England*) if any be bitten perchance by them, they commonly uſe to be kil'd, though they be not mad; for fear, leaſt the leven of the canine choler which remains within the body of the party bitten, might draw to it the malignant ſpirits of the ſame dog, (ſhould he afterwards chance to be mad) which might come to diſtemper the ſpirits of the perſon. And, this is not only practiſed in *England*, where there are ſuch dangerous dogs; but alſo in *France*; according to the report of *Father Cheron*, *Provincial* of the *Carmelites* in this Gountrey; In his *examen de la Theologie myſtique*, newly imprinted, and which I have lately read.

I will ſay nothing of artificial Noſes, made of the fleſh of other men, to remedy the deformity of thoſe, who by an extreme exceſs of cold, have loſt their own: which new Noſes putrifie, as ſoon as thoſe perſons, out of whoſe ſubſtance they were taken, come to die; as if that ſmall parcel of fleſh, engrafted on the face, lived by the ſpirits it drew from it's firſt root and ſource. For, though this be conſtantly avouch'd by conſiderable Authors, yet *I* deſire you to think that *I* offer you nothing which is not verified by ſolid tradition; ſuch, that it were a weakneſs to doubt of it.

But, it is high time that *I* come now to my *Seventh* and laſt *Principle*: it is the laſt turn of the engine, and will, *I* hope, batter down quite the gate which hindred us an entrance to the knowledge of this ſo marvailous a myſtery; and imprint ſuch a lawful mark upon the doctrine propoſed, that 'twill paſs for current. This principle is, that *The ſource of thoſe ſpirits or little bodies, which attract them to it ſelf, draws likewiſe after them that which accompanies, and whatever ſticks and is united to them.* This concluſion needs not much proof, being evident enough of it ſelf. *If* there be nails, pins, or ribands, tied to the end of a long chord or chain, and withal a lump, either of wax, gum, or glue; and *I* take this chord or chain by one end, and draw it to me, till the other end come to my hand: it cannot be otherwiſe but, at the ſame time, the nails, the pins, the ribands, the lump, and in fine, all that hangs at it muſt come to my hand. *I* go therfore to relate to you, only, ſome experiments that have been made, in conſequence of this Principle; which will moſt ſtrongly confirm the others produced before.

The great fertility and riches of *England* conſiſts chiefly in paſturage for Cattle; wherof we have the faireſt in the world, principally of Oxen and *K*ine. *T*her's not the meaneſt Cottager, but hath a Cow to furniſh his Family with milk: 'tis the principal ſuſtenance of the poorer ſort of people, as 'tis alſo in *Switzerland*; which makes them very careful of the good keeping and health of their Cows. Now, if it happen that the Milk boil over, and ſo comes to fall into the fire, the good woman or maid preſently gives over whatever ſhe is adoing and runs to take the Veſſel off the fire: and, at the ſame time, ſhe takes a handful of Salt, which uſes to be commonly in the corner of the Chimney to keep it dry, and throws it upon the cinders where the milk

was

was ſhed. Ask her, wherfore ſhe doth ſo? and ſhe will tell you, 'tis to prevent a miſchief to the Cows Udder, which gave this milk: for without this remedy, it would grow hard and ulcerated; and ſhe would come to piſs blood, and ſo be in danger to die. Not that 'twould riſe to this extremity the firſt time; but ſhe would grow ill-diſpoſed, and if this ſhould happen often, the Cow would ſoon miſcarry. It might ſeem that there were ſome ſuperſtition or folly in this: but the infallibility of the effect warrants from the laſt, and, for the firſt, many indeed believe that the malady of the Cow is ſupernatural, or an effect of Sorcery, and conſequently that the remedy which I have alledg'd is ſuperſtitious; but 'tis eaſie to diſabuſe any man of this perſwaſion, by declaring how the buſineſs goes, according to the foundations I have laid. The milk falling upon the burning coals is converted to vapour, which diſperſes and filtreth it ſelf through the circumambient air, where it encounters the Light and Solar rays which tranſport it further; augmenting and extending ſtill farther the Sphere of its activity. This vapour of the milk is not alone or ſimple; but compos'd of fiery atoms, which accompany the ſmoke and vapour of the milk, mingling and uniting themſelvs therwith. Now, the ſphere of the ſaid vapour extending it ſelf to the place where the Cow is; her Udder, which is the ſource whence the milk proceeded, attracts to it the ſaid vapour, and ſucks it in together with the fiery atoms that accompanied it. The Udder is, part, glandulous and very tender; and conſequently very ſubject to inflammations: this fire then heats, inflames, and ſwells it; and in fine, makes it hard and ulcerated. The inflamed and ulcerated Udder is near the Bladder; which comes likewiſe to be inflamed: making the *anaſtomoſes* and communication 'twixt the veins and arteries to open and caſt forth blood, and to regorge into the bladder, whence the Urine empty's it ſelf. But, whence comes it, you will ask, that the Salt remedies all this? 'Tis becauſe that is of a nature clean contrary to the fire; the one being hot and volatil, the other cold and fixed: inſomuch that, where they uſe to encounter, the Salt, as it were, knocks down the fire, by precipitating and deſtroying its action; as may be obſerv'd in a very ordinary accident. The chimneys which are full of Soot uſe to

take

take fire very easily; and, the usual remedy for this is to discharge a Musket in the funnel of the Chimney, which looseneth and brings down with it the fired Soot, and then the disorder ceases: but, if there be no Musket, or Pistol, or other Instrument to fetch down the Soot, they use to cast a great quantity of Salt on the fire below; and that chokes, and hinders the atoms of fire, that otherwise would incessantly mount up and joyn with them above, which, by this means wanting nouriture, consume themselvs, and come to nothing. The same thing befalls the atoms which are ready to accompany the vapour of the milk; the salt precipitates and kills them on the very place: and if any chance to scape and save themselvs, by the great strugglings they make, and go along with the said vapour, they are nevertheless accompanied with the atoms and spirit of the Salt sticking to them; which, like good wrestlers, never leave their hold, till they have got the better of their Adversary. And you may please to observe by the by, that that there is not a more excellent balme for a burn, than the spirit of salt, in a moderate quantity. 'Tis then apparent, that there cannot be employ'd any means more efficacious, to hinder the ill effects of the fire upon the Udder of the Cow; than to cast upon her milk, that has boil'd over upon the Cinders, a sufficient quantity of Salt. This effect, of securing the Cows Udder upon the burning of her milk, makes me call to mind, what divers have told me they have seen both in *France* and *England*, *viz.* when the Physicians examine the milk of a Nurse, for the Child of a Person of Quality, they use to make proofs several ways, before they come to judg definitively of the goodness thereof; as, by the taste, by the smell, by the colour and consistence of it: and sometimes they cause it to be boil'd, till it come to an evaporation and they see it's residence, with other accidents and circumstances which may be learnt and discern'd by this means. But, those, of whose milk this last experiment hath been made, have felt themselvs so tormented in their Paps, while their milk was a boiling; that, having once endured this pain, they would never consent that their milk should be carried away out of their sight and presence: though they willingly submited to any other proof than that by fire.

Now

Now, to confirm this experiment of the attraction which the Cows Udder makes of the fire and vapour of the burnt milk, I am going to recount to you another of the ſame nature; wherof I my ſelf have ſeen the truth more than once, and wherof any one may eaſily make trial. Take the excrement of a Dog, and throw it into the fire, more than once; at firſt you ſhall find him heated and moved, but, in a ſhort time, you ſhall ſee him, as if he were burnt all over, panting and ſtretching out his tongue, as if he had run a long courſe. Now, this alteration befalls him, becauſe his entrails, drawing to them the vapour of the burn'd excrement, and, with that vapour, the atoms of fire which accompanied it, grow ſo chang'd and inflam'd, that the Dog, having always a Fever upon him, and not being able to take any nouriſhment, his flancks cling together and he dies. 'Twere dangerous to divulge this experience among ſuch perſons, as are ſubject to make uſe of any thing for doing of miſchief: for, the ſame effect, would be wrought upon Mens Bodies, if one ſhould try the concluſion upon their excrements.

There hap'ned a remarkable thing to this purpoſe, to a neighbor of mine in *England*, the laſt time I was there: He had a very pretty Child, whom becauſe he would have always in his eye, he kept the Nurſe in his Houſe. I ſaw him often, for he was a ſtirring man, and of good addreſs; and I had occaſion to uſe ſuch a man. One day I found him very ſad, and his Wife a weeping: wherof demanding the reaſon, they told me that that their little Child was very ill; that he had a burning Fever, which inflamed him all over, as appear'd the redneſs of his face; that he ſtrove to go to Stool, but could do little, and that little he did was cover'd with blood; and that he refuſed alſo to ſuck: And that which troubled them moſt was, that they could not conjecture how this indiſpoſition come; for his Nurſe was very well, her milk was as good as could be wiſhed, and in all other things there was as much care had of him as could be. I told them, that the laſt time I was with them, I obſerv'd one particularity, wherof I thought fit to give them notice; but ſomthing or other ſtill diverted me; 'twas this, that the Child, making a ſign that he was deſirous to be ſet on his feet, let fall his excrements on the ground;

and

and his Nurſe preſently took the Fire-ſhovel and cover'd them with embers, and then threw all into the fire: The mother began to make her excuſes, that they were not more careful to correct this ill habit of the child; telling me that, as he advanc'd in years, he ſhould be corrected for it. I replied, that 'twas not for this conſideration that I ſpake of it: but ſearching after the reaſon of her childs diſtemper, and conſequently to find ſome remedy. And thereupon, I related to them the like accident which had hap'ned, two or three three years before, to a child of one of the moſt illuſtrious Magiſtrates of the Parliament of *Paris*; who was bred up in the Houſe of a Doctor of Phyſick of great reputation in the ſame Town: I told them alſo what I have now related to you, touching the excrements of Dogs. And I made reflections to them upon a thing they had often heard, and which is often practiſed in our Country; *viz.* that, In the Villages, which are always dirty in the winter, if there happens to be a Farmer any thing more neat than others, and that keeps the approaches to his Houſe cleaner than his neighbours do, the Boys uſe to come thither, in the night time or when it begins to be dark, to diſcharge their bellies there: becauſe, in ſuch Villages there is not much commodity of eaſments; beſides that in ſuch clean places the knaves are out of danger to ſink into the dirt, which otherwiſe might riſe up higher than their ſhooes. The good houſwives in the morning, when they open their doors, and find ſuch an ill-favour'd ſmell, uſe to be tranſported with choller: But they, who are acquainted with this trick, go preſently and make red hot a Spit, or Fire-ſhovel, and thruſt it ſo into the excrements, and when 'tis quencht, they heat it again and again to the ſame purpoſe. Mean while the Boy, that had plaid the ſloven, feels a kind of pain and collick in his bowels, with an inflammation in his fundament and a continual deſire to go to Stool: and he is hardly quit of it, till he ſuffer a kind of Feaver all that day; which makes him return thither no more. And theſe women, to be freed from ſuch affronts, paſs among the Ignorant for Sorcereſſes, and to have made a compact with the Divel; ſince they torment people in that faſhion, without ſeeing or touching them. This Gentleman did not diſallow thoſe

things

things I have already told you; but was confirm'd farther when I wiſh'd him to look farther into the fundament of his child, for without doubt he ſhould find it red and inflamed, and perhaps full of pimples, and excoriated. Not long after, this poor child grew ill, and with much pain and pitiful cries, voided ſome ſmall matter: which in lieu of caſting into the fire or covering it with embers, I cauſed to be put into a baſon of cold water and ſet in a cool place. This was continued to be done, every time the child gave occaſion; and he began to amend the very ſame hour, and, within four or five daies became perfectly well recover'd. But, leaſt I treſpaſs too much upon your patience, I'le hold you no longer, but with one experiment more, very familiar in our Countrey: and then I will ſumm up all that hath been ſaid; to make you ſee the force and import of this whole Diſcourſe.

We have in *England*, as I touch'd before, excellent Paſturage for the feeding and fatting of Cattle; ſo abundant, that, it falls out often, the Oxen come to acquire ſuch exceſs of fat that it extends it ſelf in a great quantity to their legs and feet and even hoofs; which many times cauſes impoſtumes in the of their feet that comes to ſwel and get a core full of putrified matter, ſo that the Beaſt is not able to go. The Owners obſerving that, though the Beef be never the worſe for the Shambles, yet they are damnified therby; becauſe, not being able to bring them to *London*, (where the grand market is for fat Beefs through all *England*, as *Paris* is for *Auuergne*, *Normandy*, and other provinces of *France*,) they are conſtrain'd to kill them upon the place, where their fleſh is not worth half the price they might have got in *London*: the Owners, I ſay, have recourſe to this remedy *viz.* Obſerving where the Oxe, Cow, or Heifer, fix upon the Ground the ſick foot, at firſt riſing up in the morning; that very turf with the print of the foot on it, they cut up, and hang upon a tree or hedg lying open to the North wind: And, that wind blowing upon the turf, the Beaſt comes to be cured, within three or four daies very perfectly, but if one ſhould put that turf towards the South or South weſt wind the foot would grow worſe. Theſe circumſtances will not ſeem ſuperſtitious to you when you ſhall have conſider'd, how, that, by the repoſe of the night, the corrupt matter or core uſes to gather, in a

great quantity under the foot of the Beaſt; which being ſet on the ground in the morning preſſes forth the impoſtume: the matter wherof ſticks to the place. Now, this turf of Earth being expoſed in ſome proper place, to receive the dry cold blaſts of the Northern winds; thoſe blaſts intermingle with the ſaid corrupt impoſtumated matter: which ſpreading its Spirits about through all the air, the ulcerated foot of the Animal, (being their ſourſe) draws them to it, and with them the cold dry atoms which cure it; the malady requiring no other help than to be wel dry'd, and refreſhed. But, if one ſhould expoſe this turf to a moiſt hottiſh wind, it weuld produce contrary effects.

Behold, my Lords, all my wheels formed; I confeſs they are ill filed and poliſhed, but let us try whether, being put together and mounted, they wil make the engin go: which, if they do, and fairly draw in the Concluſion, you will, I preſume, have the goodneſs to pardon the groſſneſs of my language; and, paſſing by the words, content your ſelvs with the naked truth of the things. Let us therefore apply what ha's been ſaid, to that which is practic'd, when a hurt perſon is cured. Let us conſider *Mr. Hovel* wounded in the hand, and a great inflammation following upon his hurt; his Garter is taken, cover'd with the blood that iſſued from the wound, and is ſteep'd in a baſon of water where *Vitriol* was diſſolv'd, one keeps the Baſon in a cloſet moderately warm'd by the Sun all day, and at night in the chimney corner; ſo that the blood upon the Garter be always in a good natural temperament, neither colder nor hotter than the degree required in a healthful body: What now muſt reſult, (according to the doctrine that we endeavour to eſtabliſh,) from all this? In the firſt place, the Sun and Light will attract, a great extent and diſtance off, the ſpirits of the blood upon the Garter: and the moderate heat of the chimney, acting gently upon the compoſition, (which comes to the ſame thing, as if one ſhould carry it dry in his pocket, to make it feel the temperate heat of the Body,) will puſh out and thruſt forward ſtill the ſaid atoms, and make them march of themſelvs a good way in the air round about, to help therby the attraction of the Sun and Light.

Secondly, the Spirit of *Vitriol*, being incorporated with the blood

blood cannot chooſe but make the ſame voyage together with the atoms of the blood. Thirdly, the wounded hand expires and exhales, in the mean time, continually abundance of hot fiery Spirits, which ſtream as a river out of the inflamed hurt: nor can this be, but the wound muſt, conſequently, draw to it the air which is next it. Fourthly, this air muſt draw to it the other air next it, and that the next to it alſo; and ſo there will be a kind of current of air drawn round about the wound. Fiftly, with this air will come to incorporate at laſt the atoms and Spirits of the Blood and *Vitriol*, which were diffuſed a good way off in the air, by the attractions of the Light and the Sun: Beſides, it may well be, that, from the begining, the orb and ſphere of theſe atomes and Spirits extended it ſelf to ſo great a diſtance; without having need of the attractions of the air, or light to make them come thither. Sixthly, the atoms of blood, finding the proper ſource and original root whence they iſſued, will ſtay there, re-entering into their natural beds and primitive receptacles: wheras the other air, being but a paſſenger, will evaporate away as ſoon as it comes; as, when it is carried away through the funnel of the chimney, as ſoon as it is drawn into the chamber by the door. Seventhly, the atoms of the blood being inſeparable from the Spirits of the *Vitriol*, both the one and the other will joyntly be imbibed together within all the corners, fibres, and orifices of the Veins which lye open about the wound; whence it muſt of neceſſity be refreſht, and in fine imperceptibly cured.

Now to know in virtue of what ſuch an effect and cure is ſo happily performed, we muſt examine the nature of *Vitriol*: which is compoſed of two parts; the one fixed, the other volatil. The fixed, which is the Salt, is ſharp and biting, and cauſtique in ſome degree. The volatil is ſmooth, ſoft, balſamical, and aſtringent; and 'tis for that reaſon that *Vitriol* is made uſe of, as a ſovereign remedy for the inflammations of the eyes, when they are corroded and parched by ſome ſharp and burning humor or defluction; as alſo in injections, where excoriations require them, and in the beſt plaiſters to ſtanch the blood and incarnate hurts. But, they who well know how to draw the ſweet oyl of *Vitriol*, which is the pure volatil part therof, know alſo that in the whole cloſet of Nature, there is no balm like this oyl:

For, it heals in a very ſhort time, all kind of hurts which are not mortal, it cures and conſolidates the broken veins of the breaſt; ev'n to the Ulcers in the lungs, which is an incurable malady without this balm. Now, 'tis the volatil part of the *Vitriol*, which is tranſported by the Sun (the great Diſtiller of Nature) and which by that means dilates it ſelf in the air: and that the wound or part which receiv'd the hurt, draws and incorporates with the blood and its humours and ſpirits. Which being true, we cannot expect a leſs effect of the volatil *Vitriol*, but that it ſhould ſhut the veins, ſtanch the blood, and ſo, in a ſhort time heal the wound.

The method and primitive manner how to make uſe of this Sympathetical remedy was, To take only ſome *Vitriol*, and that of the common ſort, as it came from the Druggiſts, without any preparation or addition at all; and to make it diſſolve in fountain (or rather in rain-water,) to ſuch a proportion, that, putting therin a knife or ſome poliſhed iron, it ſhould come out chang'd into the colour of copper: and, into this water, they uſed to put a clowt or rag embrued with the blood of the party hurt; if the rag were dry: But, if the rag was yet freſh, and moiſt with the reaking blood, there was no need but to ſprinkle it with the ſmal powder of the ſame *Vitriol*; ſo that the powder might incorporate it ſelf with, and imbibe the blood remaining yet humid. In both caſes the rag was to be kept in a temperate heat or place; *viz.* the powder in ones pocket, and the water (which admits not of this commodity) within a chamber where the heat ſhould be temperate, and, every time that one ſhould put new water of *Vitriol* or freſh powder to new cloth or other bloodied ſtuff, the patient would feel new eaſe; as if the wound had been then dreſt with ſome ſovereign medicament. And for this reaſon they uſed to reiterate this manner of dreſſing both Evening and Morning.

But now, the moſt part of thoſe who ſerve themſelvs with the *Powder of Sympathy* endeavour to have Vitriol of *Rome*, or of *Cyprus*; which they calcine at the rayes of the Sun: And beſides, ſome uſe to add the Gum of *Tragagantha*; it being eaſy to add to things already invented.

For mine own part, I have ſeen as great and admirable effects of ſimple *Vitriol*, of eighteen pence the pound; as of that

Powder

Powder which is uſ'd to be prepared now at a greater price: yet I blame not the preſent practice; on the contrary, I commend it, for, it is founded upon reaſon. For

Firſt, it ſeems that the pureſt and beſt ſort of *Vitriol* operates the beſt.

Secondly, it ſeems alſo, that the moderate calcining therof at the rays of the Sun takes away the ſuperfluous humidity of the *Vitriol*; and operates on no part therof, but that which is good: as if one ſhould boil broth ſo clear that it would come to be gelly, which certainly would render it more nouriſhing.

Thirdly, it ſeems, that the expoſing of the *Vitriol* to the Sun, to receive calcination, renders its ſpirits more fitly diſpoſed to be tranſported through the air by the Sun, when need requires. For, it cannot be doubted but ſome part of the æthereal fire or Solar rays incorporates with the *Vitriol*; (as is plainly diſcover'd in calcining *Antimony* by a Burning-glaſs; for it much augments the weight of it, almoſt half in half:) both are near-a-kin: thoſe therefore, eaſily obeying the Motion of their brother-beams, muſt needs make the groſſer matter, they are united with leſs refractory.

Fourthly, theſe Solar rays, being embodied with the *Vitriol* are in a poſture to communicate to it a more excellent virtue, than it hath of it ſelf; as we find that *Antimony*, calcin'd in the Sun becomes (of rank poiſon that it was before) a moſt ſovereign and balſamical medicament, and a moſt excellent Corroborative of Nature.

Fifthly, the Gum of *Tragagantha*, having a glutinous faculty, and being, in other reſpects very innocent, may contribute ſomthing towards the conſolidation of the wound.

My Lords, I could add many moſt important conſiderations touching the Form and eſſence of *Vitriol*; wherof the ſubſtance is ſo noble, and the origin is ſo admira ble, that one may avouch it, with good reaſon, one of the moſt excellent bodies which Nature hath produced.

The *Chymiſts* aſſure us that it is no other than, a corporification of the Vniverſal Spirit, which animates and perfects all that hath exiſtence in this ſublunary World: which it draws in that abundance to it, that I my ſelf have, in a ſhort time, by

expoſing ſome only to the open air, made an attraction of a celeſtial *Vitriol* ten times more in weight, of a marvailous pureneſs and virtue; a priviledge given to none but It, and pure virgin Salt-peter.

But to anatomiſe, as we ought, the nature of this tranſcendent Individual, (which nevertheleſs in ſome reſpect may be ſaid to be Vniverſal, and fundamental to all bodies,) would require a Diſcourſe, far more ample, than I have yet made: And I have already entertain'd you ſo long, that it would be a very great indiſcretion to entrench further upon your goodneſs, who have hitherto liſtned to me with ſo much attention and patience; if I ſhould go about to enter into any new matter, and embark my ſelf for a further voyage. Wherefore remiting ſeveral things to ſome other time, when you ſhall pleaſe to command me, and returning to the general conſideration of this Sympathetical cure I will put a Period to this Diſcourſe: after I ſhall have ſaid two or three words, which will not be of ſmal importance, for the confirmation of all that hath been alledg'd by me hitherto.

I have deduced to you the admirable cauſes of the operations, and ſtrange effects of *the Powder of Sympathy*, from their firſt root. Theſe fundamental cauſes are ſo linked one within the other, that it ſeems there can be no default, ſtop, or interruption, in their proceedings. But we ſhall be the better fortified in the belief of their virtue and efficacy, and how they come to produce the effects of ſo many rare Cures, if we conſider that when any jugling is practiced in ſome one of theſe cauſes, or in all of them together, we may perceive immediately an effect altogether differing from the former. If I had not formerly ſeen a *Watch* or *Clock*, I ſhould be juſtly ſurprized and remain aſtoniſh'd, to ſee the hand or needle ſo regularly mark the journal hours and motion of the Sun, upon the flat of a Quadrant; and that it ſhould turn and make its round every four and twenty hours; there being nothing ſeen that ſhould puſh on the ſaid needle. But, if I look on the other ſide, I ſee wheels, reſſorts, and counterpoiſes in perpetual movement; which having well conſidered, I preſently ſuſpect, that thoſe Wheels are the cauſe of the movement and turnings of the ſaid Needle; though I cannot preſently diſcern or know how they effect it, becauſe of the plate that lies interpoſed betwixt

betwixt them. Therupon, I reaſon thus with my ſelf, Every effect whatever muſt of neceſſity have ſome cauſe; therfore the body moved there, muſt neceſſarily receive its movement from ſome other body contiguous to it: Now, I ſee no other body, to make the needle of the quadrant move and turn, but the ſaid wheels; Therefore, I muſt of force be perſwaded to attribute the movement to them. But, afterwards, when I ſhall have ſtop'd the motion of thoſe wheels and taken away the Counterpoiſe, and obſerved that ſuddenly the needle ceaſes to move; and that, applying again the Counterpoiſe, and giving liberty for the wheels to turn, the needle returns to her ordinary courſe, and that I make one wheel go faſter, by putting my finger to it, or by adding more weight to the counterpoiſe, the needle haſtens and advances its motions proportionably: then I grow to be convinced and entirely ſatisfied; and ſo abſolutely conclude that theſe Wheels and Counterpoiſes are the true cauſe of the motion of the Needle.

In the ſame manner, if, interrupting the action of any of thoſe cauſes, which I have eſtabliſhed for the true foundation of the Sympathetical Powders virtue, I alter, retard or hinder the Cure of the Wound: I may boldly conclude, that they are the legitimate and genuine true cauſes of the Cure; and that we need not amuſe our ſelvs to ſearch after any other.

Let us then examine the matter by this rule. I have affirm'd that, the *Light* tranſporting the atoms of the *Vitriol* and Blood, and dilating them to a great extent in the air: the wound or place hurt attracts them, and therby is immediately refreſht and eaſ'd; and conſequently comes to be heal'd; by the Spirits of the *Vitriol*, which is of a balſamical virtue. But, if you put the Baſon or Powder with the cloth-imbrued with blood into a Cup-boord or a corner of ſome cold room, or into a Cellar, where the Light or freſh Air never comes (whence the place is corrupted and full of ill ſmells,) in that caſe the wound can receive no amendment, nor any good effect from the ſaid Powder. And, it will fall out in the ſame manner, if, having put the baſon or Powder in ſome By-corner, you cover them with ſome thick cloth, ſtuffing and ſpongie, which may imbibe the atoms coming forth, and retain the light and rays that enter there, ſo that they are thereby ſtop'd and quite loſt. More-

Morover, if you ſuffer the water of *Vitriol* to congeal into ice; or the cloth dip't in it; the party hurt ſhall be ſenſible, at the begining, of a very great cold in his wound: but when it is iced all over, he ſhall feel neither heat nor cold, in regard that congealed cold conſtipates the pores of the water, ſo that it ceaſes to tranſpire and ſend forth Spirits. If one waſh the bloody Cloth in Vinegar or Lye, (which, by their penetrating acrimony, tranſport all the ſpirits of the blood), before the *Vitriol* be applied; it will produce no effect. Yet, if the Cloth be waſh'd but with pure ſimple water, it will nevertheleſs do ſomething; for, that water carries not away ſo much; but, the effect will not be ſo great, as if the Cloth had not been waſhed at all; for then it would remain full of the ſpirits of the blood. The ſame cure is performed, by applying the remedy to the Blade of a Sword which ha's wounded a body; ſo the Sword be not too much heated by the fire: for that will make all the Spirits of the blood to evaporate; and conſequently the Sword will contribute but little to the cure. Now, the reaſon why the Sword may be dreſſed in order to the cure, is, becauſe the ſubtile ſpirits of blood penetrate the ſubſtance of the blade, as far as it went into the body of the wounded party; and, there keep their reſidence, unleſs the fire, as I ſaid before, chaſe them away. For experiment wherof, hold the Blade over a chafing-diſh of moderate fire, and you ſhall diſcern, on the ſide oppoſite to the fire, a little humidity; which reſembles the ſpots that ones breath makes upon looking-glaſſes, or upon the burniſhed blade of a ſword. If you look upon it through a magnifying-glaſs, you ſhall find that this ſoft dew of the Spirits conſiſts in little bubles, or blown bladders: and, when once they are entirely evaporated, you ſhall diſcern no more upon the weapon; unleſs it were thruſt a new into the body of a living perſon: nor, from the begining ſhall you diſcover any ſuch thing, but preciſely upon the part of the blade, which had entred the wound.

This ſubtile penetration of the Spirits into hard ſteel, may confirm the belief of ſuch Spirits piercing through the skin of a woman big with child: as I remind, I to have propoſed to you in my *ſixth Principle*.

To confirm all theſe particulars, I could add, to thoſe I have already

already recounted many notable examples more; but, I fear I have already too much exerciſed your patience; I will therfore ſuſpend any mention of them at this time; but I offer to entertain any of this Honourable Aſſembly therwith, when they ſhall have the curioſity.

I conclude then, my Lords, with repreſenting to you that all this myſtery is carry'd and guided throughout, by true natural ways and circumſtances; although, by the agency and reſorts of very ſubtile ſpirits.

I am perſwaded my Diſcourſe hath convincingly ſhew'd you, that, in this Sympathetical cure, there is no need to admit of an action diſtant from the Patient: I have traced to you a real Communication 'twixt the one and the other; *viz.* of a Balſamical ſubſtance, which corporally mingles with the wound.

Now, it is a poor kind of puſillanimity and faint-heartedneſs, or rather a groſs weakneſs of the Uuderſtanding, to pretend any effects of charm or magick herin; or to confine all the actions of Nature to the groſſneſs of our Senſes, when we have not ſufficiently conſider'd nor examined the true cauſes and principles wheron tis fitting we ſhould ground our judgment: we need not have recourſe to a Demon or Angel in ſuch difficulties,

Nec Deus interſit, niſi dignus vindice nodus
Inciderit. ——

ΤΕΛΟΣ